



Home Office

# Evaluation of Alcohol Arrest Referral Pilot Schemes (Phase 1)

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## **Evaluation of Alcohol Arrest Referral Pilot Schemes (Phase 1)**

Alistair Kennedy, Ian Dunbar, Michelle Boath; Risk Solutions

Caryl Beynon, Paul Duffy; Liverpool John Moores University

Julia Stafford, Geraldine Pettersson; Stafford Pettersson Neath Associates

*The views expressed in this report are those of the authors, not necessarily those of the Home Office (nor do they reflect Government policy).*

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## Key implications for policy makers

Alcohol interventions have been applied with some success in health settings so four pilot schemes were arranged to see whether a similar approach could be applied in a criminal justice setting to reduce re-offending. This evaluation of the schemes has identified a number of valuable lessons about the offending population, the delivery of such schemes and how they can be evaluated.

The evaluation found that most offenders were males aged between 18 and 24. Over half of the arrests were for violent and public order offences, and approximately 60 per cent of offenders were not arrested for another offence in the same police area in the six months before or after the offence. The latter point is consistent with previous research and has important implications for the evaluation because if re-offending is low the impact on re-offending (measured by the change in arrest rate) will also be low. This means that large sample sizes will be needed to detect a significant change in arrest rates. The analysis actually found small reductions in re-arrest rates compared with the Control Group, but the results were not statistically significant. This result was predictable given the low rate of re-arrests and the fact that three of the schemes recruited many fewer clients than expected.

Alcohol interventions are generally targeted at harmful and hazardous drinkers but the evaluation found that dependent drinkers made up the largest proportion of offenders. Interestingly, dependent drinkers showed a greater willingness to change and they reduced their alcohol consumption by more than other groups following the arrest and intervention. Unfortunately, the evaluation had no control group for alcohol consumption so it is not possible to say that the reduction is due to the alcohol intervention, some other form of treatment or simply the effect of being arrested. Previous work on alcohol brief interventions delivered in criminal justice settings in the UK also observed reductions in alcohol use post intervention but these reductions were seen in control groups as well as intervention groups. A second phase of piloting is currently underway. This will investigate further the suggestion from this evaluation that the reduction in alcohol consumption may be attributable to factors associated with being arrested rather than the alcohol intervention.

A larger study is required to determine the impact of alcohol interventions on re-offending and, by including a suitable control group, on alcohol consumption. Ideally, the evaluation would also consider changes over a longer period than six months; this would provide more arrest data and help assess the longevity of any benefits.

There has been much debate about whether alcohol interventions should be performed in the custody suite and, if not, whether the use of conditional bail/cautioning should be used to ensure attendance for sessions. The results are inconclusive but client interviews and observation of the interventions suggest that greater emphasis should be placed on the quality of the discussion rather than when or how it takes place. Specifically, motivational interviewing techniques should be used to identify 'levers' that will help clients recognise that they need to change their behaviour and help them to do so.

Further work is required to decide whether alcohol interventions should be provided to all clients or whether they should be screened to remove 'no risk' or dependent drinkers. For interventions delivered in the custody suite the marginal cost of an intervention is low and screening may not be necessary. However, the difficulty in getting clients to attend community-based interventions may mean that screening is important and useful in helping to engage the client.

## Executive summary

Brief interventions have been used with some success in the health sector and the National Alcohol Strategy identified arrest referral as another means of reaching harmful and hazardous drinkers. Brief interventions are not homogenous but are typically characterised by their length. They are a means of helping people identify harmful and hazardous drinking patterns and they establish ways of reducing alcohol intake through techniques such as motivational interviewing. The Home Office commissioned four Drug and Alcohol Action Teams (DAATs), in areas suffering high levels of alcohol-related crime and disorder, to run pilot alcohol arrest referral (AAR) schemes using brief interventions for 12 months from October 2007 to October 2008.

The pilots aimed to reduce harmful and hazardous drinking and reduce re-offending by targeting individuals arrested for alcohol-related offences. Clients were identified within custody suites and referred to alcohol workers for a brief alcohol intervention. Three of the schemes delivered the interventions in the custody suite, although two of these had originally planned to deliver interventions in the community – the change in approach being necessary to increase the number of referrals. The fourth scheme relied heavily on Conditional Bail to encourage attendance and was more successful in delivering interventions away from the custody suite.

The evaluation sought to test the aims of the pilots as well as learning lessons about the delivery and implementation of AAR and the cost-effectiveness of the schemes.

This report presents the evaluation findings based on:

- interviews with people involved in delivering the interventions and a cross-section of clients;
- observing the delivery of interventions and comparing this against best practice in motivational interviewing;
- analysing data collected by the schemes on Alcohol Intervention Records<sup>1</sup> (AIRs) about clients. Follow-up AIRs were also used to determine the impact of the interventions on alcohol consumption;
- assessing the impact on re-offending by comparing the change in the arrest rate for clients receiving the intervention to a retrospective matched comparison group from within the same police area;<sup>2</sup> and
- analysing the cost of delivering the interventions and using this to conduct a break even analysis.

## Understanding alcohol-related offenders

A total of 2,177 alcohol interventions were delivered by the schemes and the evaluation has provided valuable information on the profile of people arrested for alcohol-related offences:

- 40 per cent of offenders were aged 18–24 years old;
- 91 per cent of clients were White and 83 per cent were male;
- 38 per cent of offenders were dependent drinkers, with hazardous drinkers being the next largest group (at 35%); and

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<sup>1</sup> The Alcohol Intervention Record was used by schemes to record personal detail about clients. It also included a number of tests to assess an individual's drinking and offending patterns, including the ten point AUDIT questionnaire to examine their drinking behaviour.

<sup>2</sup> It was decided that a retrospective comparison group design was the best method available for the evaluation. It was recognised that the absence of data on historical drinking behaviour would limit the conclusions that could be drawn in this area, but this was accepted because the primary aim was to assess the impact on re-offending (for which retrospective data were available in the form of arrest records).

- 34 per cent of clients were arrested for violence offences, with public order offences (18%) and drunk and disorderly (16%) being the next most common offence types.

An important finding was that 61 per cent of people in the Intervention and Control Groups had not been arrested in the six months before or after the 'index arrest' (i.e. the arrest resulting in the alcohol intervention and its equivalent for the Control Group). This confirms the findings from previous research (Donkin and Birks, 2007) and means that, if the arrest rates are low, any change in the arrest rates will be too. This has important implications for the evaluation of such schemes on re-offending: if the change in arrest rates is low much larger samples will be needed to detect statistically significant changes.

The analysis also found a strong correlation between the level of alcohol consumption and age. This means that age could be used as a proxy to identify areas likely to be seeing higher numbers of dependent, harmful or hazardous drinkers.

### Screening and referral

AAR schemes delivered alcohol interventions to people who had been arrested when under the influence of alcohol. Clients were referred to alcohol workers via voluntary or compulsory routes. Interventions were originally intended to target harmful and hazardous drinkers, based on evidence from health settings. However, over half of the clients receiving alcohol interventions were classified as being either 'no risk'<sup>3</sup> or dependent drinkers. This is probably because the tool<sup>4</sup> was used as part of the intervention rather than being used to screen clients, but it raises two issues: should alcohol interventions be given to dependent drinkers and is screening actually necessary?

The study found that dependent drinkers reported a greater willingness to change than other groups and showed a slightly greater reduction in their level of alcohol consumption than harmful and hazardous drinkers. This suggests that dependent drinkers may be more responsive to interventions than expected but, in the absence of a control group for alcohol consumption and inconclusive findings on re-offending, it is not possible to draw any firm conclusions. The intervention could also perform a valuable role in directing dependent drinkers towards more structured alcohol treatment services.

Since alcohol interventions are unlikely to do any harm, the main reason for screening is to avoid wasteful use of resources. Where interventions are delivered in the custody suite the marginal cost should be minimal and screening is less likely to be necessary. However, the effort involved in getting clients to attend community-based interventions may mean that screening is needed here and could also be used to help clients recognise their need to change their attitudes and behaviour.

The majority of interventions followed voluntary referrals, and most of these occurred in the custody suite before clients had been discharged. This avoided problems with clients failing to attend appointments and ensured higher numbers of interventions delivered, but some stakeholders were concerned that interventions delivered in custody suites would be less effective and favoured quality over quantity of interventions delivered.

<sup>3</sup> The AIR form classified individuals with an AUDIT between 0 and 7 as 'no risk' drinkers. This category does not exist on the actual AUDIT test but was used for the purposes of the evaluation to denote those with a lower risk.

<sup>4</sup> The AUDIT tool is a ten-point questionnaire that asks questions about alcohol consumption and its effect on the individual. The responses are summed and, depending on the score, drinkers are classified as being hazardous (8–15 points), harmful (16–19 points) or dependent drinkers (20–40 points). For the purposes of the pilot a 'no risk' category, those scoring 0–7 points, was also included.

Schemes were encouraged to consider compulsory referrals, through the use of Conditional Bail or Conditional Cautions, as well as voluntary ones. However, Conditional Cautions were only used for two per cent of referrals and the low take-up was generally blamed on the amount of paperwork that needed to be completed, although some stakeholders disagreed that this was the case. Conditional Bail was used more extensively (13% of cases), and almost 90 per cent of these were on one scheme which used Conditional Bail as its primary referral route. Two other schemes had intended to use Conditional Bail but concerns over enforcing a breach of the bail conditions limited its use.

## **Scheme design**

In practice, most clients were content to receive the alcohol intervention in the custody suite and there was no evidence that these were less memorable or effective than community-based interventions. However, community-based interventions were longer and provided more opportunity to identify motivational 'levers' that could be used to help clients recognise that they needed to change their behaviour and motivate them to do so. However, the interventions delivered in the community did not explore these issues in any greater depth than custody-suite-based schemes. More emphasis should be placed on the quality of the discussion, seeking to identify 'motivational levers' for changed behaviour, rather than where the intervention takes place.

## **Effectiveness of interventions**

### **Alcohol consumption**

Three schemes saw an overall reduction in alcohol consumption and, despite being based on just 162 clients overall, this change was statistically significant for two schemes. Furthermore, significant reductions were seen for males, females, all age bands and all AUDIT bands (except for 'no risk' drinkers). However, in the absence of a control group it is not possible to assess how much of the reduction in consumption is attributable to the alcohol intervention rather than the experience of being arrested. Previous work on alcohol brief interventions delivered in criminal justice settings in the UK also identified reductions in alcohol use following the intervention but similar reductions were also observed in control groups. This suggests that the reduction in alcohol consumption may be attributable to factors associated with being arrested rather than the alcohol intervention, but further work is needed to establish this.

### **Re-offending**

The impact of the schemes on re-offending was assessed by comparing the change in arrest rates for a group that had received the intervention with a retrospective matched control group which had not. Overall, the reduction in the arrest rate for the Intervention Group was marginally more than for the Control Group, suggesting that alcohol interventions may have had a beneficial effect. Unfortunately, the low re-arrest rate and small sample sizes meant that the reduction was not statistically significant and the results were distorted by an 'outlier' in one scheme.<sup>5</sup> These results do not necessarily mean that the interventions were not effective. The low rate of re-arrests, combined with small sample sizes on two schemes and no arrest data at all from a third scheme, makes it difficult to detect small changes in arrest rates.

A break-even cost analysis was performed by comparing the average cost of crimes committed by the Intervention Group to the cost of providing the schemes. This found that the schemes would need to reduce the number of arrests in the six-month period following

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<sup>5</sup> This individual had been arrested 18 times in the six months before the intervention and three times in the following six months.

the intervention by between 0.6 and 6.0 arrests per 100 clients in order to be value for money. For comparison, the overall reduction in arrest rate was 0.5 arrests per 100 clients, although this was not a statistically significant result.

### **Points for consideration**

The evaluation has provided useful information on the profile of people receiving alcohol interventions and the challenges of delivering these in custody suites and in the community. It has also identified a number of lessons that would benefit future pilot schemes and evaluations.

- Delivery of interventions to dependent drinkers may be more beneficial than first thought and can provide a useful way of referring clients to more suitable treatment services.
- Screening may only be justified for community-based interventions because of the increased effort required to get clients to attend; it could also help clients recognise that they need to change their behaviour.
- Greater use should be made of motivational interviewing techniques to identify 'levers' that will help clients recognise benefits of changing their behaviour that are important to them, as well as helping them devise strategies for doing so.
- Larger sample sizes are needed to detect significant changes in re-offending and a control group is needed to determine whether the reduction in alcohol consumption observed on the AAR schemes is attributable to the interventions or other factors.
- The AIR provided valuable information for the evaluation but was time-consuming to complete and the intervention tended to be based around the form. It is important to ensure that the evaluation methodology does not inhibit effective delivery of the intervention.

# 1. Introduction

Alcohol-related crime has become an increasing cause for public concern. Crimes associated with alcohol are wide ranging, including driving offences, violence, criminal damage, drunk and disorderly and other public order offences. The most recent British Crime Survey disclosed that alcohol-related violence had remained high since 1995, with the 2009/10 survey finding that for half (50%) of all violence-related incidents, victims believed the offender to be under the influence of alcohol (Flatley et al., 2010). This figure rose to 65 per cent in cases of 'stranger violence'.

Much alcohol-related crime is connected with the night-time economy, particularly in and around pubs and clubs in town and city centres (Institute of Alcohol Studies, 2006; Finney, 2004). Concern about excessive alcohol consumption has led to a range of interventions being introduced to deal with alcohol-related offenders. The 'Models of Care for Alcohol Misusers' (MoCAM) lays out a framework for delivery of interventions, including the delivery of brief interventions, mainly focused on primary care trusts to identify and intervene with harmful drinkers. 'Safe, Sensible, Social: The next steps in the National Alcohol Strategy' (Department of Health, 2007) identified arrest referral as a possible means of delivering alcohol interventions which include advice, support and, if necessary, referral for treatment.

Brief interventions are characteristically short in length. They are a means of helping people identify harmful and hazardous drinking patterns and they establish ways of reducing alcohol intake through techniques such as motivational interviewing. There is a substantial body of evidence for the effectiveness of brief interventions in primary care settings (Wilk et al., 1997; Heather and Wallace, 2003; Wutzke *et al.*, 2002; Moyer and Finney, 2004; Kaner et al. 2009) but no conclusive evidence for their effectiveness within the criminal justice system (Wells-Parker and Williams, 2002; Hopkins and Sparrow, 2006; Watt, Shepherd and Newcombe, 2008).

To address this, the Home Office commissioned four Drug and Alcohol Action Teams (DAATs) in areas suffering high levels of alcohol-related crime and disorder to run pilot alcohol arrest referral (AAR) schemes. The schemes delivered alcohol interventions to people who had been arrested when under the influence of alcohol. Clients were referred to alcohol workers via voluntary or compulsory routes (the latter through Conditional Bail or Conditional Cautions) to receive an intervention which covered individuals' levels of drinking, the role alcohol might have played in their offending, and their readiness to change. The pilots ran for 12 months from October 2007 until October 2008 with the evaluation covering the same time period.<sup>6</sup>

The aims of the AAR pilot were to:

- provide alcohol interventions that reduce re-offending amongst adults who have been arrested for alcohol-related offences;
- reduce hazardous and harmful drinking;
- improve engagement of hazardous and harmful drinkers in brief advice sessions;
- learn implementation and delivery lessons that could be applied to any further expansion and/or continuous improvement of schemes; and
- deduce information around the cost-effectiveness of such schemes.

The overall aim of the evaluation was to assess the effectiveness of the pilot schemes in meeting the above aims; the evaluation objectives were therefore to:

- analyse the profile of those engaged by the schemes;

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<sup>6</sup> A second phase of piloting was started in November 2008 with the evaluation covering cases between March 2009 and June 2010.

- establish whether alcohol interventions had an effect on arrest rates and the cost-effectiveness of the schemes;
- seek evidence of any change in health and alcohol consumption for those receiving alcohol interventions; and
- learn implementation and delivery lessons to apply to other schemes.

## Methodology

The evaluation comprised three main elements: process evaluation, outcome analysis and cost assessment. This section outlines the main sources of information and methods of data collection and analysis. Appendix 1 provides further details of the evaluation methodology.

### Alcohol Intervention Record

At the outset of the AAR pilot, an Alcohol Intervention Record (AIR) was designed to capture data on the people receiving the interventions. The AIR was an eight-page questionnaire in two parts (see Appendix 1 for a more detailed description).

- Part A recorded contact details, gender and date of birth.
- Part B recorded further details about the client and the referral route plus a 'readiness to change' scale, the ten-point AUDIT questionnaire<sup>7</sup>, the General Health Questionnaire (GHQ)<sup>8</sup> and self-reported offending data.
- The AIR also requested consent for (a) allowing the AIR to be included in the evaluation, (b) being contacted by the evaluation team and (c) accessing the client's arrest data.

For data security reasons the two parts were always kept separate. The AIRs were completed by the alcohol worker at first contact or when delivering the intervention.

Completed AIRs were forwarded to the evaluation team under an agreed protocol and entered into secure databases for analysis. A total of 2,428 AIRs were received but a number of them were classed as being 'invalid' and were not included in the evaluation<sup>9</sup> leaving 2,177 valid AIRs. Appendix 2 shows the proportion of AIRs received per scheme that were considered valid and went on to be followed up.

### Process evaluation

The process evaluation aimed to assess the effectiveness of the delivery of the schemes and the key factors associated with successful implementation. Data were obtained from a number of sources including the pilot service level agreements (SLAs), interviews with pilot scheme staff and observations of the interventions being delivered. A range of stakeholders were purposively selected for interview at each of the schemes including eight intervention managers, 15 alcohol workers, 11 police officers and three people from the Crown Prosecution Service (see Table A1.9). Representatives from the Department of Health, Alcohol Concern and the SIPS Programme<sup>10</sup> were also interviewed to understand the wider context of the evaluation.

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<sup>7</sup> The AUDIT tool is a ten-point questionnaire that asks questions about alcohol consumption and its effect on the individual. The responses are summed and, depending on the score, drinkers are classified as being hazardous (8–15 points), harmful (16–19 points) or dependent drinkers (20–40 points). For the purposes of the pilot a 'no risk' category, those scoring 0–7 points, was also included.

<sup>8</sup> The General Health Questionnaire (GHQ) is described by NFER-Nelson (1992). It is a measure of psychological well-being comprising 12 questions, each of which has two responses (whether it applies and the extent to which the individual is affected).

<sup>9</sup> Of the 2,428 AIRs received, three had not consented to be involved in the evaluation and, for a further 248 forms, it was not evident that an intervention had actually taken place.

<sup>10</sup> The Screening and Intervention Programme for Sensible drinking (SIPS) is testing the use of brief interventions in GP surgeries, Accident and Emergency departments and by probation services.

Case-tracking interviews with clients at three months post intervention were conducted in order to gain insight into clients' experiences of the delivery of alcohol interventions, and their perception of its impact on their alcohol consumption and associated behaviours. A total of 41 interviews were conducted; 16 of these were interviewed again six months post intervention (see Table A1.10). It was originally intended to purposively select 25 harmful and hazardous drinkers from each scheme, stratified by gender, age band, and type of offence. However, problems with recruitment meant that all harmful and hazardous drinkers were approached for interview. As a result, the numbers from each area vary and the samples are not stratified, so the views cannot be considered truly representative of clients across the schemes. The interviews were transcribed and analysed thematically. In addition, a number of interventions were observed when being delivered, to see how the schemes worked in practice.

### Outcome analysis

The impact of alcohol interventions on alcohol consumption was assessed by comparing the AUDIT scores on the initial and follow-up AIRs. The GHQ was included to measure changes in health. Unfortunately, completion of the GHQ was poor and there were insufficient data for any meaningful analysis, so this is not reported.

Follow-up AIRs were posted to the 1,617 people who had consented to being contacted and had provided adequate contact details (see Figure A1.6). Following problems with postal returns of the AIRs, contact was also attempted by telephone and email<sup>11</sup> but, despite repeated attempts, only 173 people provided follow-up AIRs and the AUDIT questions were only completed on 162 of these. Analysis found that the people providing follow-up AIRs were generally representative of all the clients receiving interventions (see Section 0), but the low response rate means that the findings should be treated with caution.

The impact of alcohol interventions on re-offending was assessed using arrest rates as a proxy. Data were gathered from local police records for those who received an intervention (the Intervention Group), and for an anonymised Control (or comparison) Group. The Control Group was identified from within the same police force area for a period shortly before the AAR pilot schemes began. The index arrest for the Control Group (the arrest chosen as the surrogate for the intervention) had to occur from 22 June 2006 to 21 May 2007 – i.e. before the start of the pilot. The sample was matched to the Intervention Group using profiles of age band, gender and offence type.<sup>12</sup>

The numbers of arrests were calculated for a period of six months prior to and after the alcohol intervention for members of the Intervention Group, and six months prior to and after a randomly selected index arrest for the Control Group. For each individual, the difference between the numbers of arrests occurring before and after the intervention (or index arrest) was calculated. This allowed comparison of the differences (a 'difference of differences' approach) to look for evidence of an effect on arrest rates following alcohol interventions.

Where there appeared to be differences between the arrest rates for the Control and Intervention Groups, statistical tests were performed to determine whether the observed effects were statistically significant. Throughout this report, the term 'significant' means that the result was statistically significant using the appropriate statistical test.

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<sup>11</sup> The number of contact attempts made depended on the contact details provided; if a postal address, telephone number and email address were included; six contact attempts were made (two per communication method).

<sup>12</sup> Arrest reasons were categorised as relating to one of five offence types: violence; public order; drink driving; criminal damage; or drunk and disorderly. Other offence types were excluded since the likelihood of the corresponding offences in the Control Group being alcohol-related was considered to be too low.

Using a retrospective Control Group allowed changes in arrest rates to be calculated but data on individuals' alcohol consumption were not available so it could not be used to assess the effect of receiving an alcohol intervention on alcohol consumption. A limitation of the study is that any reductions identified for the Intervention Group cannot be solely attributed to the intervention and may be due to other factors, such as the experience of arrest.

### **Costs of schemes**

The pilot schemes provided retrospective cost data using a spreadsheet template (provided in Appendix 1, Table A1.12) for any costs incurred.<sup>13</sup> This information was then analysed to calculate the cost of delivering the interventions. The potential benefits of the schemes were assessed using cost-of-crime information, and a break-even analysis was performed to assess the reductions in arrests that would be required for the benefits to match the costs of the schemes.

### **Structure of report**

Chapter two provides an overview of each of the pilot schemes and profiles the client population engaged by the schemes. Findings on alcohol consumption and re-offending are presented in chapter three and chapter four presents the findings from the process evaluation, looking at qualitative evidence relating to the implementation and operation of the schemes. The costs of running each scheme are discussed in chapter five and chapter six presents the conclusions and points for further consideration.

The appendices provide further detail on the evaluation methodology, the analysis of the AIR forms and arrest data, and a list of references. Throughout this report, references to tables and figures in appendices are in the format 'Table A1.n' where 'A1' indicates that the table is in Appendix 1.

The names of pilot areas have been anonymised and are referred to as Schemes A, B, C and D. These references remain consistent throughout the report and are not intended in any way to reflect the performance of the schemes.

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<sup>13</sup> The level of detail provided by schemes varied depending on their finance systems and, as a result, it was not possible to compare costs at a detailed level.

## 2. Overview of the Pilot Schemes

Details about how each of the four pilot sites set up and ran their AAR schemes are provided in Table 1. This describes the original design plans and how they changed during the course of the evaluation.

Schemes A and D did not make any substantial changes to their processes during the course of the pilot. However, schemes B and C were initially delivering much lower numbers of interventions than they had planned and both schemes decided to increase the numbers of interventions delivered by performing them in the custody suite.

**Table 1) Overview of the AAR pilot schemes**

	Scheme A	Scheme B	Scheme C	Scheme D
<b>Proposed approach</b>	DIP <sup>14</sup> workers to screen clients (using the AUDIT tool) at either of two custody suites and provide an initial 20–40 minute advice session. Clients receiving conditional cautions to receive a further session of one–two hours.	Referrals by police with two interventions (one hour each) delivered in evenings and at weekends away from the custody suite.	Referrals by police with a single two-hour intervention (including screening using the AUDIT tool) to be delivered away from the custody suite.	Referrals by police with two interventions (one hour each) delivered away from the custody suite, generally in a primary care setting.
<b>Excluded offenders</b>	Minors and people arrested for drink driving offences	Minors, people arrested for drink driving offences and dependent drinkers	Minors and people arrested for drink driving offences	Minors and people arrested for drink driving offences
<b>Referral method</b>	Voluntary and conditional caution	Voluntary, conditional bail and conditional caution		
<b>Targets in Service Level Agreement</b>	40 initial interventions per month with eight conditional caution referrals by 31.03.08 and >75% of these to be completed.	33 referrals per month with eight of these by conditional caution and >67% of these to be completed.	50 referrals per month with six of these by conditional caution in months 1–3, rising to 12 per month thereafter.	50 referrals per month with 12 of these by conditional caution.

<sup>14</sup> DIP (Drug Intervention Programme) involves criminal justice and treatment agencies working together with other services to provide a tailored solution for Class A drug misusing offenders in order to get them out of crime and into treatment and other support. Delivery at a local level is through Drug Action Teams, using integrated teams with a case management approach to offer access to treatment and support. This begins at an offender's first point of contact with the criminal justice system, through custody, court, sentence and beyond into resettlement. In non-intensive DIP areas, workers must engage with potential clients, as participation is voluntary. In intensive DIP areas, offenders can be tested on arrest and on charge, for a number of specific trigger offences. Those who test positive for certain drugs can be required to attend for an assessment of their drug use. <http://drugs.homeoffice.gov.uk/drug-interventions-programme/>

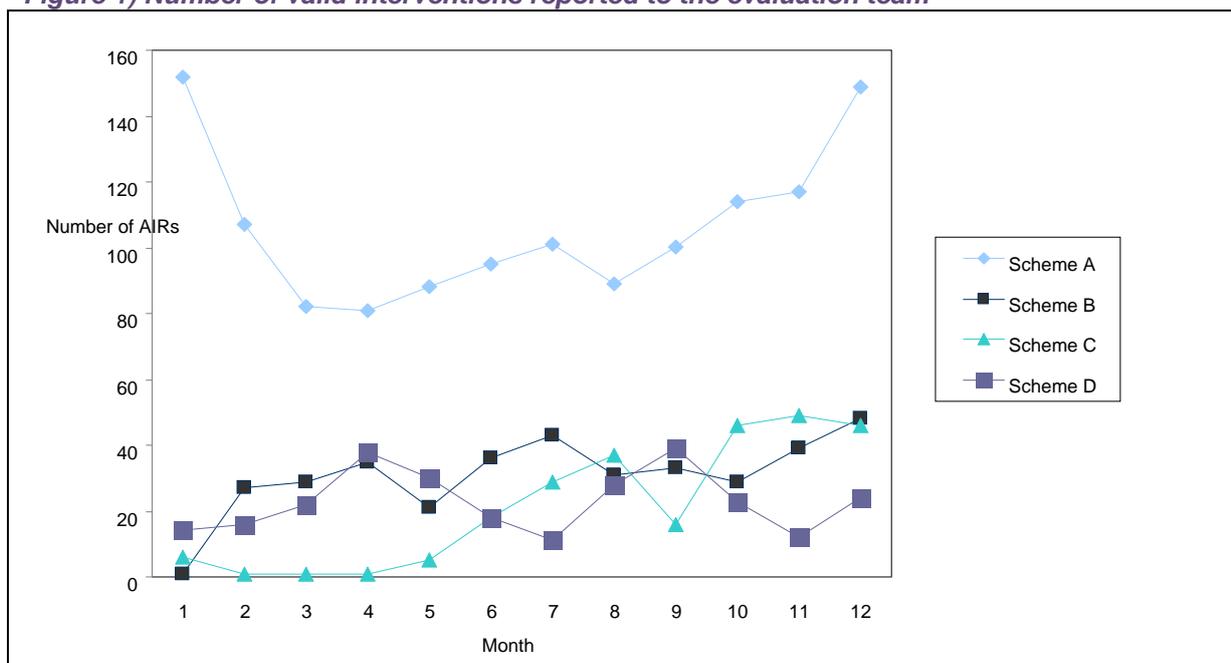
	Scheme A	Scheme B	Scheme C	Scheme D
<b>Changes made</b>	None, although the length of interventions was shorter than planned.	After one month, to address low numbers of referrals, the initial intervention was delivered in the custody suite.	In January 2008, changes were made to increase referrals via conditional bail and staff were located in the custody suite for three mornings per week. This rose to six mornings per week by March 2008. Wherever possible sessions were delivered in the custody suite.	None.
<b>Number of interventions delivered*</b>	1,275 of which: 1,208 voluntary 16 CC 1 CB (50 unknown)	372 of which: 356 voluntary 2 CC 2 CB (12 unknown)	255 of which: 202 voluntary 14 CC 28 CB (11 unknown)	275 of which: 17 voluntary 8 CC 247 CB (3 unknown)
<b>Other points</b>	DIP workers were already in place at the start of the pilot, so already had a working relationship with custody staff.		Even after the changes, attendance for interventions outside of the custody suite remained low.	

CC = conditional caution, CB = conditional bail

**Note** - for some AIRs information was not available to determine whether referrals were voluntary, conditional caution or conditional bail.

A total of 2,177 interventions were recorded as being delivered across the four schemes. Figure 1 shows the number of valid AIRs received from each scheme.

**Figure 1) Number of valid interventions reported to the evaluation team**



**Note:** Months run from the 22<sup>nd</sup> day of the month to the 21<sup>st</sup> day of the following month, with two exceptions: month 1 runs from 15 October to the 21 November 2007 and month 12 runs from the 22 September to the 31 October 2008, so these months were longer than the intervening months.

Scheme A delivered the largest number of interventions with almost 60 per cent of the overall total (1,275 interventions). Scheme B saw 17 per cent of cases with 372 interventions and schemes C and D each delivered approximately 12 per cent of cases with 255 and 275 interventions respectively.

## Client profile

In this section the profile of alcohol-related offences and offenders is examined by considering factors such as age, gender and ethnicity. Where possible, comparisons have been drawn between the gender, ethnicity and offence type profile of clients seen by the schemes and the profile of all arrestees in 2007/08 (Povey et al., 2009). The types of drinkers, as measured via AUDIT, are also examined here.

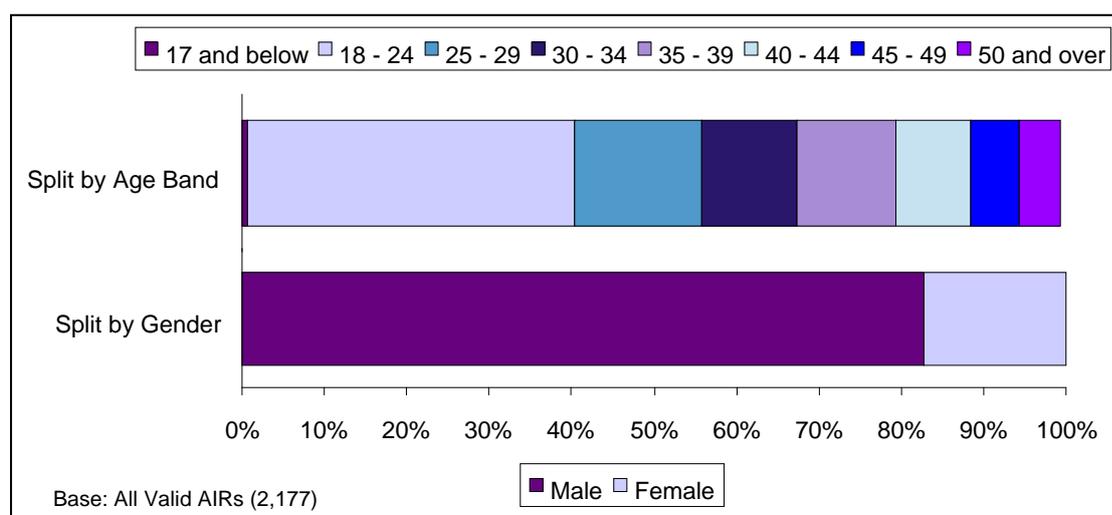
Police arrest data do not always contain an alcohol ‘flag’ so it is not possible to reliably identify alcohol-related offences unless they are specifically drink-related (such as drink driving and being drunk and disorderly). The data gathered as part of the evaluation therefore provide valuable insight into people committing alcohol-related offences.

### Client demographics

The overall breakdown of clients by age band and gender is provided in Figure 2. Over 80 per cent of clients were male and the largest age group for each site was aged 18–24 years old; this group made up 40 per cent of clients overall. All schemes delivered interventions to considerably more males than females, with the percentage of females ranging from just seven per cent in scheme B to 24 per cent in scheme C. In comparison with all arrestees in their force area, scheme C saw a disproportionately high number of females and scheme B a higher proportion of males.

The percentage of clients in each age band was broadly similar for males and females across schemes (further details provided in Appendix 2, Figure A2.7). There were, however, notable differences in the age profile between schemes. Clients in scheme C tended to be older than those in other areas with 55 per cent aged over 30 compared with no more than 43 per cent in the other sites.

**Figure 2) Overall breakdown of clients by gender and age band**



**Note:** All four schemes intended to screen out minors (i.e. offenders aged under 18).

Scheme B was the only site to see an ethnically diverse client group (see Table 2) with the vast majority of clients (over 90%) in the other three areas being White. Comparison with the ethnic profile of all arrestees within forces revealed that schemes B and D saw a greater proportion of clients from a White ethnic background than was present in the general arrestee population for 2007/08. It should be noted that the ethnicity of clients within the pilots may depend to some extent on the availability of intervention workers fluent in languages other than English.

**Table 2) Percentage of clients by main ethnic grouping**

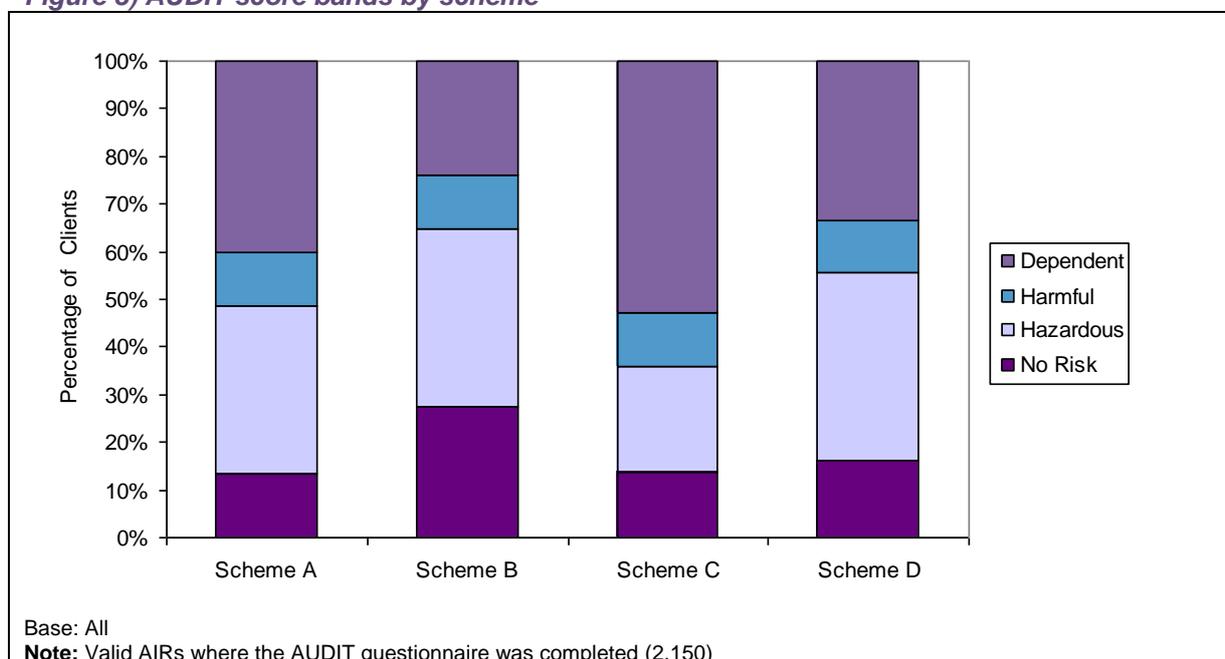
Ethnic Group	Scheme A	Scheme B	Scheme C	Scheme D
White	98.3%	61.2%	96.8%	91.2%
Asian or Asian British	0.1%	15.6%	0.0%	2.6%
Black or Black British	0.2%	9.0%	1.6%	2.9%
Mixed	1.3%	5.2%	1.2%	2.6%
Other	0.2%	9.0%	0.4%	0.7%

Base: All valid AIRs that stated ethnicity (2,164)

### AUDIT score

The AUDIT scores of clients receiving interventions were analysed to determine what types of drinkers were going through schemes and to investigate whether certain types of drinkers responded better to alcohol interventions. Previous studies in the medical field have shown that brief interventions are most effective for hazardous and harmful drinkers. Figure 3 shows the breakdown of clients by type of drinker for each scheme.

**Figure 3) AUDIT score bands by scheme**



Overall, 11 per cent of clients were defined as harmful drinkers and 35 per cent as hazardous. However, nearly two-fifths of clients (38%) were assessed as being dependent drinkers and 16 per cent classified as having no risk. The pattern was similar for male and female clients. The pilots were originally intended to target harmful and hazardous drinkers

but this shows that interventions were actually delivered to a much wider group of clients, including scheme B which intended to exclude dependent drinkers.

Scheme C saw a greater proportion of dependent drinkers than the other sites with the median audit score being 21 (in the dependent range) while the other areas had median AUDIT scores in the harmful or hazardous ranges.

A significant positive correlation was found between AUDIT scores and age. Figure A2.9 shows that clients under 30 were more likely to be hazardous drinkers whilst those over 30 were more likely to be dependent.

## Health

Psychological well-being was measured using the GHQ on the AIRs. Scores were found to be similar across sites with clients in each site having a median score of 5 (scores are between 1 and 12, with higher scores indicating high psychiatric morbidity). However, GHQ scores could not be calculated for a large proportion of cases due to missing data so the reliability of this data is poor and should be treated with caution<sup>15</sup>.

Physical health<sup>16</sup> showed more variation with health ratings being worse among clients who were dependent drinkers; 20 per cent of dependent drinkers reported their health was poor compared with six per cent of harmful drinkers, three per cent of hazardous drinkers and two per cent of clients classified as no risk. Although the highest proportion of clients in all areas rated their health as good, clients in scheme D perceived their health to be better than in other sites (32% rating it as very good or excellent). Clients in scheme C rated their health less positively (36% rated their health as only fair or poor); the higher number of dependent drinkers in scheme C may account for this variation (see Figure 3).

If the purpose of the intervention for dependent drinkers is to provide signposting to other services, schemes should consider general health-related referrals or immediate health advice as well as referral to alcohol treatment<sup>17</sup>. Health may also be the 'hook' through which to engage such clients. Where clients may have become demotivated through the failure of services to deal with their alcohol use they may be appreciative of assistance with health issues.

## Readiness to change

Clients' self-reported readiness to change at the time of intervention varied substantially both within and across sites (see Table A2.13). Median scores varied from 70 for scheme C to 50 for schemes B and D (higher scores indicated greater readiness to change). AUDIT scores and readiness to change scores were significantly positively correlated indicating that those with more substantial alcohol problems were more prepared to make changes. This may also explain why clients of scheme C (with a higher proportion of dependent drinkers) reported greater readiness to change.

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<sup>15</sup> Missing data levels were 41 per cent in scheme A, 59 per cent scheme B, 61 per cent in scheme C and 25 per cent in scheme D.

<sup>16</sup> As measured using a five-point Likert scale from poor to excellent.

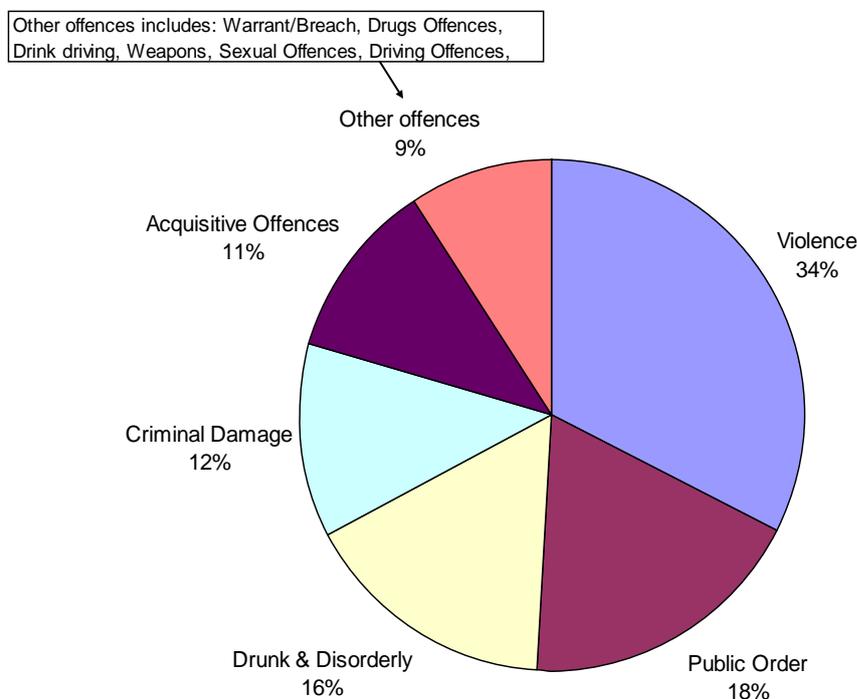
<sup>17</sup> The extent to which dependent drinkers were referred to more structured treatment services varied between schemes, depending on the numbers of referrals and facilities available to them.

- On scheme A, alcohol workers were told not to refer dependent drinkers on to other services, as they did not have the resources to cope. Nevertheless, some dependent drinkers were advised where to go for ongoing support and the alcohol workers also wrote to clients' GPs explaining that they needed help.
- Scheme B referred clients (including dependent drinkers) for follow-up appointments in the community but very few attended.
- Scheme C had a range of referral options available including structured alcohol treatment provided by the team undertaking the brief interventions.
- Scheme D clients were seen by the community alcohol team, so the full range of interventions offered by the service was available to them if required.

## Offending

Across all four schemes, over one-third of alcohol interventions were delivered to those arrested for violence offences (34% of clients, see Figure 4). This was followed by public order offences (18%) and drunk and disorderly (16%).

**Figure 4) Offence profile of clients receiving alcohol interventions**



**Base:** All valid AIRs (all schemes) where offence type was completed (2,122)

When analysed by scheme (Figure A2.12), noticeably fewer clients were given alcohol interventions following violence offences in scheme C and many more cases of people arrested for being drunk and disorderly were seen than in the other three schemes. Comparing the proportions of those receiving alcohol interventions to all arrestees in the pilot sites' police force areas in 2007/08, clients seen by the four schemes were less likely to have committed acquisitive offences and clients seen by schemes C and D were less likely to have committed drug offences. With the exception of scheme C, the proportion of clients arrested for violence offences was similar to the overall arrest figures.<sup>18</sup>

## Key points

It is not possible to reliably identify alcohol-related offences from police arrest data unless an offence is specifically drink-related (such as being drunk and disorderly). As a result, there is limited information available about alcohol-related offenders and this evaluation has provided valuable information on the demographics and drinking behaviour of this group.

As expected, most of the clients receiving alcohol interventions were male (83%) and relatively young (40% were 18 to 24 years old). Violence offences were the most common cause of arrest for people receiving alcohol interventions (34% of clients). These, together with public order offences, drunk and disorderly and criminal damage accounted for more than 75 per cent of arrests leading to referral.

<sup>18</sup> Direct comparisons with arrests in each sites' police force area are difficult due to the different breakdown of offences provided in publications from the Home Office (Povey et al., 2009). As such, comparison is only available for violence, criminal damage, drugs offences and acquisitive offences.

Scheme B was ethnically diverse, unlike the other three schemes where over 90 per cent of clients were White. Scheme C saw a higher proportion of older, dependent drinkers who rated their physical health less positively than other schemes and who reported a greater readiness to change.

The schemes were targeted at hazardous and harmful drinkers but 54 per cent of the clients were classified as either dependent or 'no risk' drinkers. This is probably because the AUDIT tool which scores this was used as part of the intervention rather than for screening clients. Future schemes need to be clear whether the AUDIT tool, or a simpler alternative, should be used to screen clients before receiving the intervention. If not, the schemes need to decide whether dependent drinkers will be referred on to structured alcohol treatment services and, if so, whether these services will be able to cope with the extra caseload. The fact that the group of dependent drinkers reported a greater readiness to change than other groups, suggests that referral for appropriate alcohol treatment services is likely to be worthwhile.

### 3. Outcome Analysis

The main aims of the impact evaluation were to examine the effect of the schemes on reducing alcohol consumption, improving general health and reducing re-offending. By quantifying these benefits (to individuals and society) in financial terms and looking at the cost of delivering AAR schemes it is possible to assess whether the pilots represent value for money. The first step in the process is to quantify the changes in:

- alcohol consumption, as measured using the initial and follow-up AIRs;<sup>19</sup> and
- re-offending, measured by the change in arrest rates between the six-month periods before and after the intervention.

#### Impact on alcohol consumption

The responses on the initial and follow-up AIRs provide snapshots of alcohol consumption at two points in time for the Intervention Group: at the time of the alcohol intervention, and six months later. This allows changes in alcohol consumption to be identified. Unfortunately, there is no Control Group for this analysis, so it is not possible to assess how much of any change is attributable to the intervention rather than other factors such as the impact of the arrest itself. In addition, data were only available for 162 clients who completed the AUDIT questionnaire at the follow-up stage, which represents a small proportion of the overall number receiving alcohol interventions. As a result, the findings are of interest but should be treated with caution.

#### Audit

Data from the 162 clients who provided complete AUDIT scores at both the intervention and follow-up stages were analysed and a significant reduction was found in overall scores indicating a reduction in levels of drinking and associated issues (see Table A2.12).

As the response rate was low it is possible that findings for the follow-up group are not consistent with those that would be expected for all clients seen by the schemes (i.e. the results could be biased). It is not possible to completely counteract this problem but analysis was conducted to examine whether, at the time of their interventions, clients who did not respond at follow-up were different from those who did respond. The only important difference between the two groups was that clients who responded included fewer young people than the group that did not. As younger clients seen were more likely to be hazardous drinkers it might be expected that this would impact on the evaluation's ability to draw conclusions for this group. However, other analysis has shown that there was no significant difference in the AUDIT scores at the time of the intervention between those who responded and those who did not, so the two groups appear to have the same characteristics in all important respects.

#### Audit C

The AUDIT C measure is a subset of questions contained within the AUDIT which look at current consumption. It therefore provides a more sensitive measure to changes in consumption than the full AUDIT tool. A significant reduction in AUDIT C scores was found for all clients as well as for the following subsets (see Table A2.13):

- hazardous, harmful and dependent drinkers;
- male and female clients, and for all age bands; and
- clients seen in schemes A and B (but not in schemes C and D).

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<sup>19</sup> Completion of the GHQ was poor and there was insufficient data for any meaningful analysis in the outcome section.

Given the lack of a comparison group it is useful to consider how these results compare with other studies in this area which have used AUDIT as a measure of alcohol consumption. In a controlled trial of alcohol brief interventions in a British magistrates' court clients saw a significant reduction in alcohol consumption (measured on AUDIT) post intervention but this reduction was not significantly different to that among the control group (Watt, Shepherd and Newcombe, 2008). A Cochrane review (Kaner *et al.*, 2009) included three studies of alcohol interventions in a primary care setting (Rodriguez, 2003; Kunz, 2004; Lock, 2006) that included control groups and used AUDIT as a measure of alcohol consumption. Of these, one study found no significant difference pre to post intervention. The other two studies found reductions in alcohol consumption but, as for the study in the criminal justice setting, found no statistically significant difference between the intervention and control groups. So for controlled studies using AUDIT in both criminal justice and health settings there has so far been no evidence that alcohol brief interventions deliver a significant reduction in alcohol consumption. This is despite the considerable evidence from controlled trials supporting their effectiveness in primary care settings when other measures of alcohol consumption are utilised.

### Impact on re-arrest

Given the criminal justice focus of the initiative, assessing whether there is evidence that alcohol interventions had an effect on arrest rates is of particular interest. Arrest rates were used as a proxy measure for re-offending.<sup>20</sup>

The effect on re-offending was assessed by comparing the numbers of arrests for six months before and after an alcohol intervention was delivered to a member of the Intervention Group with the numbers of arrests six months before and after a proxy or 'index' arrest for the Control Group.<sup>21</sup> Unfortunately, the arrest data for scheme B could not be accessed so the analysis is based on the other three schemes only. The preparation and analysis of data are summarised in Appendix 3.

Individuals who had given consent to be included in the arrest analysis were matched with their arrest records using their initials and date of birth, together with the date of the intervention. This process of 'soft matching' meant that not all of the members in the Intervention Groups could be identified. In addition, for those that were found, some had been arrested for offences that did not fall into one of the five alcohol-related offence types,<sup>22</sup> and these individuals were excluded from the analyses. Table 3 shows the numbers of people in the Intervention Groups that were matched and the number of people then 'recruited' into the corresponding Control Group.

A total of 1,053 people were matched in the three Intervention Groups. The proportion matched on each scheme ranged from 56 per cent (scheme A) to 81 per cent (scheme D). To make it easier to observe any impact, the Control Groups contained approximately four times the number of individuals as the Intervention Groups for schemes C and D. For

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<sup>20</sup> Arrest data were used as a proxy measure for offending as they offered the most accessible and up-to-date data available. Use of conviction data was not deemed feasible as it is subject to long delays and does not include incidents for which no further action may be taken. It is important to note that arrest data are only a proxy measure for re-offending and do not provide a true measure of the number of offences being committed, only those that are picked up by police. In addition, arrests of people in the Intervention and Control Groups that occurred outside of the police area included in this research are not included in the analysis.

<sup>21</sup> The index arrest was excluded from the number of pre-arrests and post-arrests because it would simply increase the average number of arrests by one, and since it would apply equally to the Intervention and Control Groups, would cancel out when the difference of differences was calculated.

<sup>22</sup> Offences were grouped into categories agreed with the Home Office; the five categories considered to be alcohol-related were violence, public order, criminal damage, drink driving, and drunk and disorderly.

scheme A it was not possible to construct a larger Control Group,<sup>23</sup> and so the Control Group was the same size as the Intervention Group. Overall, there were 2,070 people in the three Control Groups.

**Table 3) Sample sizes for the re-offending analysis**

	Number agreeing to their arrest data being analysed	Number of clients matched for the Intervention Group	Number of people included in the Control Group
<b>Scheme A</b>	1,275	714 (56%)	714
<b>Scheme B</b>	Arrest data were not available for scheme B.		
<b>Scheme C</b>	210	141 (67%)	564
<b>Scheme D</b>	243	198 (81%)	792

### Arrest rates

The first finding is that a large proportion of people in the Intervention and Control Groups had no pre-arrests or post-arrests in the period of time considered. Of the six groups (i.e. the Intervention and Control Groups for the three schemes providing arrest data), between 50 per cent and 70 per cent of individuals had not been arrested in the six months before or after the index arrest.<sup>24</sup> This is consistent with a recent study by the Jill Dando Institute which found that around 40 per cent of people arrested for one or two violent offences at licensed premises had no other recorded criminal involvement over a period of several years (Donkin and Birks, 2007). Not all offences will result in an arrest so the impact on offending may be higher than the arrest data suggest. However, the low rate of re-arrests makes it harder to detect the impact of interventions on arrest rates.

### Change in arrest rates

Taking all three schemes together, the Intervention Groups saw a small reduction in re-arrests in the subsequent six months, but this was not statistically significant. Table 4 summarises some of the key findings from the arrest data analysis.

**Table 4) Differences in arrests for Intervention and Control Groups broken down by gender**

Scheme	Differences in arrests						Difference of differences		
	Intervention Group			Control Group					
	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall
<b>Scheme A</b>	-0.11	-0.11	-0.11	-0.08	-0.04	-0.08	-0.03	-0.07	-0.04
<b>Scheme C</b>	0.03	0.24	0.08	-0.05	-0.07	-0.05	0.08	0.30	0.13
<b>Scheme D</b>	-0.13	0.07	-0.10	-0.08	-0.27	-0.11	-0.05	0.34	0.01

**Note:** A positive number corresponds to a *reduction* in arrests

The results show that scheme C saw the greatest reduction in arrests (i.e. the highest overall difference of differences) and, although the result was not statistically significant, it was more so than the results for schemes A and D. However, the results for scheme C were affected by one male in the Intervention Group who had 18 pre-arrests and three post-arrests. This had a favourable effect on the change in arrest rates and statistical significance for any group that included him. There was a greater level of reduction in the arrest rate for female offenders in schemes C and D. However, the result for scheme D was not statistically

<sup>23</sup> This is due to the high number of interventions delivered; if most of the target clients are being engaged, and overall arrest rates have not changed significantly over the last few years, then it will not be possible to find significantly more people for the Control Group. Since the Intervention and Control Groups were relatively large for scheme A, increasing the size of the Control Group was not necessary in any case.

<sup>24</sup> The index arrest is the arrest that led to the alcohol intervention or its equivalent for the Control Group.

significant and the result for scheme C was only significant at the  $p < 10\%$  level (it is generally accepted that  $p < 5\%$  is a more robust test of significance).

A series of hypotheses around whether any particular characteristics of the Intervention Group would impact differently on changes in arrest rates were also tested (i.e. individual scheme impact, voluntary versus compulsory referrals, AUDIT score). Apart from the marked improvement in the arrest rate for female offenders in schemes C and D, no statistically significant reductions in arrest rates were attributable to any other individual characteristics (see Table A3.18).

It should be noted that the inability to demonstrate that there is an effect is not the same as demonstrating that there is no effect. There are several potential reasons that could explain why no statistically significant reduction in arrest rates was found.

- Alcohol interventions may be inherently ineffective at reducing arrest rates.
- These schemes may not have been effective due to the way they delivered the interventions.
- The effect of alcohol interventions could have been masked by other factors linked to the arrest.
- Arrest data were only analysed for the police area in which the 'index arrest' was committed and the alcohol intervention delivered. Arrests of the individual by other police forces have not been included in the analysis. Similarly, some offenders may have been imprisoned in the 12-month period. These factors will reduce the number of pre-arrests and post-arrests for both the Intervention and Control Groups.
- The sample size may be too small to detect differences, or to demonstrate their statistical significance. As noted above, more than half of the individuals in the Intervention and Control Groups were arrested only once during the 12-month period examined, thus making it difficult to detect changes in arrest rates.
- While it seems intuitive that any effect would be seen closer to the intervention rather than further away in time, it is possible that looking at arrests over a longer period of time might show some effect.

It is important to note that not every offence results in an arrest. The British Crime Survey (Flatley et al., 2010) reports detection rates of 44 per cent for violence against the person and 14 per cent for criminal damage, two of the most common offence types resulting in the arrest of people in the Intervention Groups. Someone arrested for the first time may have a history of undetected offending and may go on to commit more undetected offences. Any reduction in arrests could, therefore, be assumed to result in a larger reduction in offending.

## Key points

There was a significant reduction in alcohol consumption between the intervention and six-month follow-up for most groups of drinkers, but the small sample size means that the results should be treated with caution. It should also be noted that there are no Control Group comparisons for the AUDIT responses so it is not possible to determine whether these changes would have happened regardless of the intervention. Previous work on alcohol brief interventions delivered in criminal justice settings in the UK (Watt, Shepherd and Newcombe, 2008) has suggested that reductions in alcohol use should be expected post intervention but that these reductions can be seen in control groups as well as intervention groups. This suggests that the reduction in alcohol consumption may be attributable to the experience of being arrested rather than the alcohol intervention itself.

A high proportion of people arrested for alcohol-related offences, in both the Intervention and Control Groups, had not been arrested (by the same police force at least) in the six-month

period before or after the arrest. This is consistent with research by Donkin and Birks (2007), who looked at arrest data for people committing violent offences at licensed premises, and means that much larger sample sizes will be required to detect significant changes in arrest rate.

Analysis of arrest data for matched offenders in the Intervention and Control Groups found no significant reduction in the arrest rates attributable to the alcohol interventions. This applied to the schemes overall and individual schemes regardless of gender, whether the referral was voluntary or compulsory and whether the offender was classified as a harmful/hazardous or dependent drinker. This does not necessarily mean that the interventions were not effective. The low number of arrests in the six months either side of the index arrest, combined with the absence of arrest data for scheme B and low numbers of interventions on schemes C and D makes it difficult to detect small changes in arrest rates. Furthermore, the impact on arrest rates may be underestimated, for the Intervention and Control Groups alike, due to the way arrest data were collected (i.e. limited to arrests by the same police force within six months before or after the index arrest).

## 4. Process Evaluation

This chapter draws upon a number of sources to perform a qualitative evaluation of the four schemes. The key sources used were documentation of the schemes, interviews with key stakeholders, case-tracking interviews with clients at three and six months post intervention and observations on the delivery of interventions. The chapter considers:

- client group – who the schemes were intended to help and who actually received alcohol interventions;
- referral routes – and the role of the CPS, particularly for interventions delivered away from the custody suite;
- police involvement – to refer clients and/or provide access to custody suites;
- integration with DIP – the risks and benefits of an integrated approach;
- delivery of the intervention – choice of location, duration and content of the session, and the type of relationship created with the client; and
- the perceived impact of interventions.

### Client group

At the start of these schemes it was envisaged that interventions would be delivered to the large numbers of binge-drinking clients with hazardous or harmful drinking behaviour that are perceived to be at the heart of alcohol-related disorder, and are at risk of developing dependency. However, as shown in Figure 3, the range of clients contacted by schemes was much greater than this with all four schemes delivering interventions to higher than expected numbers of older, already dependent drinkers.

*We anticipated that we would get a lot of young people, what we have seen is a massive group of older people who are dependent in terms of their AUDIT score. (Intervention Worker)*

*The majority are binge drinkers. Age is I would say the average sort of late 20s. You get a few that are dependent drinkers, not so many. (Intervention Worker)*

*A brief intervention is not going to do something about your classic dependent drinker but what it is, is a clear gateway into referrals and more structured treatment. (Intervention Manager)*

Previous research suggests that alcohol interventions are likely to be less effective with dependent drinkers (Academic ED SBIRT Research Collaborative Group, 2007; Bazargan-Hejazi *et al.*, 2005; Moyer *et al.*, 2002; Mattick and Jarvis, 1994), a view accepted by key stakeholders in the schemes.<sup>25</sup> Despite the limitations of alcohol interventions with dependent drinkers it was felt that the session could act as a useful opportunity for onward referral for treatment. The success of this approach will be determined by the availability, suitability and ease of access to structured alcohol treatment services which is known to vary around the country (Cabinet Office, 2004).

Statements from clients receiving alcohol interventions suggested that a substantial number felt they did not have a problem with alcohol, with a minority of clients expressing the view that their alcohol use was affecting their life in a negative fashion. Across both these groups, clients' motivation to tackle their alcohol use varied and it was not necessarily the case that clients who accepted they had a problem were more ready to

*To be honest I think it would have been useful for somebody else but for me personally it was quite ... it's not like I'm not an alcoholic and it wasn't that useful for me 'cause I got given three sessions to go to but I didn't need to after the first one so it wasn't that useful for me but I can see how it could be useful for other people who might have a problem. (Scheme D Male)*

<sup>25</sup> It is interesting to note, therefore, that the improvement in AUDIT and AUDIT C scores shown in table A2.12 were more significant for dependent drinkers than for other types of drinkers.

tackle their alcohol use. In addition some clients reported having already started to make changes to their alcohol use.

## Referral routes

The Home Office encouraged referrals via voluntary routes or through compulsory referrals (i.e. conditional bail and conditional caution). However, there was considerable discussion across the sites about the use of conditional bail and conditional caution for arrest referral. In particular conditional cautions were viewed by many stakeholders as being overly onerous in terms of paperwork compared with alternative disposals,<sup>26</sup> and this was reflected in the rarity of its use (see Table 5).

*For a conditional caution you have to find the CPS, do a full set of case papers, ... it's that monstrous amount of paperwork that is involved. (Police)*

*They've got to produce a file, get an admission, seek CPS out, have the person back in, and deliver a conditional caution. (Intervention Manager)*

*[Conditional cautions should take] no more than half an hour, in the simple straightforward cases such as a drunk and disorderly case. (CPS)*

*To me it doesn't seem like any extra work because there's only one or two extra forms you're completing. (Police)*

**Table 5) Numbers of interventions by scheme and referral method**

	Scheme A	Scheme B	Scheme C	Scheme D	Totals
<b>Voluntary</b>	1,208	356	202	17	<b>1,783</b>
<b>Conditional bail</b>	1	2	28	247	<b>278</b>
<b>Conditional caution</b>	16	2	14	8	<b>40</b>

**Base:** All valid AIRs where referral method was stated (2,101)

This concern had been raised in the evaluation of the early implementation of conditional cautioning which recommended a review of the administration surrounding conditional cautioning (Blakeborough and Pierpoint, 2007). However, it should be noted that views varied between key stakeholders with some not accepting that substantive extra work was involved.

The use of conditional bail proved to be particularly contentious in some schemes, as reflected in the levels of its use in schemes A, B and C. A manager for one of the schemes that made little use of conditional bail had concerns about the legality of employing it in this context. More generally, though, the concerns centred on the enforceability of conditional bail and hence whether it would be effective at getting people to attend alcohol interventions. Scheme C did use conditional bail but the scheme experienced difficulties in getting the police and CPS to agree to its use.

*Conditional bail: What happens if they don't turn up? Nothing because we're not going to enforce it ... we cannot enforce a health intervention. (Intervention Manager)*

*We had a real struggle getting them to accept doing conditional bail ... [but it has] worked superbly. Ninety-nine per cent of them turn up. (Intervention Manager)*

*They've got to come because it's a condition of bail, they don't know what to expect and a number of people have said, "I'm really glad I came". (Intervention Manager)*

These views were in contrast to scheme D which saw the use of conditional bail as integral to successful implementation of the pilot. Schemes B, C and D all planned to deliver interventions at follow-up appointments away from the custody suite but only scheme D,

<sup>26</sup> The conditional caution is meant to be an alternative to a charge and not to be used in place of lesser disposals such as simple cautions or fixed penalty notices. Therefore the paperwork required for a charge must be in order. An evaluation of the early implementation of conditional cautions found some evidence of 'up tariffing' (Blakeborough and Pierpoint, 2007).

which made greater use of conditional bail, was able to make this work. Unfortunately, the number of referrals, rather than the number of interventions, was not recorded by the schemes so it is not possible to assess the effectiveness of alternative referral methods at getting clients to attend follow-up appointments.

It is clear that at the time these pilots were running there was still substantial work required to ensure that schemes could confidently apply both conditional cautioning and conditional bail for offenders arrested for alcohol-related offences. This would involve clarifying the legal position on actioning breaches of bail conditions given in these circumstances, as well as addressing practical issues (or people's perceptions of these) about using these referral routes. Further work is also needed to examine the success of conditional bail and conditional caution in ensuring client attendance, but this was not possible in the evaluation because the numbers of referrals (as opposed to numbers of interventions completed) were not available to the evaluation team.

### Working with the CPS

At all four sites, interactions with the CPS proved to be more problematic than with their police colleagues. The difficulties were strongly linked to perceptions about the practicality of using conditional cautions and conditional bail as referral routes. A number of interviewees referred to the need to 'seek out' the CPS as one of the barriers to using these routes. This was particularly so for conditional cautions, as a standard caution does not require CPS involvement and can be completed more quickly. However, the CPS did not regard this as a key issue and two interviewees noted that CPS Direct can be contacted at any time – one stating that a conditional caution can be set up in the course of a 45-minute phone call.

If conditional bail or conditional caution are to be used to encourage attendance at appointments, the CPS needs to be closely involved at an early stage to agree the process and ensure that it can provide the necessary level of support.

### Police involvement

Custody officers play a key role in the delivery of alcohol interventions – whether it is to screen and refer clients on to the alcohol workers or allowing alcohol workers to interview clients in the custody suite.

### Briefing police

For the pilots to work, delivery organisations needed to establish good working relationships between the police in the custody suites and the intervention workers. While police staff were given briefings about the AAR pilots, there was a feeling that this could usefully have been done at an earlier stage, rather than when all the details were in place and the pilots were about to go live. In schemes A and C in particular, some custody-suite-based officers were not informed about the scheme until alcohol workers were already in place. While this was not felt to have affected the long-term functioning of the pilots it was an issue that was seen to contribute to slow start-up.

*In the early days ... the police weren't exactly keen to take this on board. (Intervention Manager)*  
*[Often it's] "oh joy, here's another initiative to do", so there is that sort of barrier to it. (Police)*  
*Custody sergeants should have been trained and told about it before it started. (Police)*  
*It's part of the furniture, it's like talking to one of your colleagues, you expect to see the Arrest Referral worker there. (Police)*

### Access to custody suites

Running interventions in the custody suite meant that workers had to obtain the necessary police

*There's a problem with ... waiting for the police checks to go through, not the CRB but the actual custody suite ones. (Intervention Worker)*

clearance. This can take time and some workers in scheme C were unable to get the necessary clearance after the decision was made to have a custody-suite presence. Staff working in custody suites also need to be carefully briefed on their role and how to conduct themselves.

### Promoting the schemes

For scheme D, police involvement included informing clients about the requirements of their bail condition, although it would appear from the case-tracking interviews that more could have been done in some cases to explain the purpose of the intervention. For schemes without a custody-suite presence, the police are the first point of contact with clients and their role could be increased to promote the service. However, the independence of the session was highlighted as key for clients and it could be that a more proactive police role could be counterproductive.

*No, I got all that [information about what the session was for] from the counsellor when I actually turned up for the appointment. I knew the place so I obviously knew it was something to do with drinking but it wasn't through the police, no. (Scheme D Male)*

### Integration with DIP

Despite worries about initial liaison between police and alcohol workers, it was generally felt that close partnerships were developed as the schemes became established. This may in part have been facilitated by the fact that the Drug Interventions Programme (DIP) has established the role of substance misuse workers in the custody suite and the principle that the custody suite can act as the point for referral into assessment and treatment. The relationship between DIP and alcohol pilots is a point that warrants further consideration. In scheme A DIP and AAR overlapped, to a large degree, with the DIP worker also providing the alcohol interventions. However, in the other schemes DIP provision was kept separate.

Across the pilots there were opposing views expressed about the best approach to delivering the wider substance misuse arrest referral agenda. Some stakeholders felt that integration of drugs and alcohol schemes was the way forward by allowing resources to be pooled and the alcohol side to benefit from the greater funding available through DIP. Others felt they should be kept separate as they were different issues and combining them ran the risk of the alcohol work becoming lost in the larger DIP agenda.

*The DIP worker would take the alcohol worker down and introduce them round. (Intervention Manager)*

*[Drugs and alcohol] are quite often inter-related anyway. So it seems to make sense that it should be one of the same, rather than seeing two different people. (Police)*

*[If joined to DIP] there would be massive differences in treatment regimes and [referrals], so I don't think there would be any real benefit. (Intervention Worker)*

*There's a philosophical difference in someone with a Class A drug problem, compared to someone where alcohol's been a significant factor. (Intervention Manager)*

Also relevant here is that combining the schemes reduces the apparent number of initiatives operating; helping to overcome the potential barrier of acceptance by the police due to 'initiative overload'.

### Delivery of the intervention

#### Location of intervention

The decision on where to deliver interventions has a fundamental effect on the numbers of referrals and the way in which interventions are delivered. At the start of the pilot only scheme A delivered interventions within custody suites. Schemes B and C relied on voluntary referrals to attend locations away from the custody suite, but the numbers attending were low so they quickly changed their approach to resemble that of scheme A.

These three schemes decided that clients were unlikely to attend a voluntary intervention after their release and that the best approach was to provide the intervention in the custody suite. Not only were clients already there, many seemed to welcome the opportunity to spend some time out of their cell talking to a sympathetic person. Schemes B and C saw a substantial increase in the number of voluntary interventions when they changed to delivering them in the custody suite. The evidence suggests that attendance at follow-up appointments is likely to be low unless compulsory referrals (conditional bail or cautioning) are employed.

Stakeholders expressed strong views about the location of sessions. Proponents of the custody suite model felt that the critical factor was making the immediate link between custody and alcohol use while arguments to the contrary emphasised an alternative location for fostering a therapeutic relationship and the delivery of quality over quantity. However, where sessions were delivered appeared to be of little consequence to clients; most were happy with the delivery environment whether that was the custody suite or in the community.

*You're seeing them fresh, they can't really be in that much denial about the event if you see them in custody.*  
(Intervention Worker)

*Number 1 you're not going to get the attrition, number 2 the intervention is being delivered when their actual offending is still fresh in their mind.* (CPS)

*Away from custody suites is the best way ... we could push numbers up quite considerably but I'm not sure they'd be meaningful interventions.* (Intervention Manager)

*This is an effective methodology, with the element of contact away from the custody suite and where possible the element of coercion to first appointment.* (Intervention Manager)

Concerns were raised by a small number of clients as to *when* the session was delivered rather than *where*. Clients raised doubts about their ability to attend appropriately to the intervention when they were hung over, still intoxicated, distressed about their circumstances or desperate to get out of police custody. It is worth considering the level of information that individuals can absorb under these circumstances, but this may be countered by the view that immediacy is important. In contrast, some clients in scheme D raised doubts over an approach that referred everyone before any assessment was made of levels of alcohol use. Clients who raised these concerns were generally those who felt alcohol was not an issue for them despite the fact that their AUDIT assessment identified them as hazardous or harmful drinkers.

*Yeah it was a nice bright room, comfortable seat, you know offered me a cup of tea or a drink of water. After the cell it was a blessing.* (Scheme A Male)

*I was still drunk, I had alcohol in my system so I can't remember the session very well.* (Scheme A Female)

It is worth noting that working in the custody suite meant that the alcohol workers had to be based in the suite when offenders were in custody, namely during the evenings and at weekends. In scheme A there were initial difficulties in persuading DIP workers, who worked normal office hours in the early stages of the pilot, to change their hours to meet this requirement.

### **Duration of sessions**

Data gathered from interviews with clients showed that community-based interventions resulted in much longer sessions, possibly because the client had made the effort to attend and there was less time pressure. Clients reported that interventions on scheme D typically lasted around an hour (often more than one session was completed), while those in schemes A and C lasted between ten and 30 minutes. Observations at schemes A and C agree with the timings suggested by clients, while only one intervention was observed at

scheme D<sup>27</sup> (see Figure A1.5). There were no case-tracking interviews completed for scheme B but observations suggested that the sessions were similar in duration to those in schemes A and C. The majority of clients in the case-tracking interviews were satisfied with the length of their session.

*It was so quick and vague you know. It was just like in and out, a quick questionnaire you know. (Scheme C Male)*  
*I remember it quite clearly but it was very short. (Scheme D Male)*

Previous studies on brief interventions for alcohol use in healthcare settings have been inconclusive as to whether longer interventions have a more significant impact than shorter versions (Nilsen et al., 2008; Babor et al., 2006; Moyer et al., 2002; Bien et al., 1993). In addition, a recent Cochrane review (Kaner et al., 2009) concluded that there was no evidence that longer interventions result in significantly greater reductions in alcohol consumption and claimed that the content and structure of the intervention were more important. Therefore it should not be assumed that shorter interventions would necessarily be less effective.

### Establishing rapport

Previous research in the substance misuse treatment field has suggested that the relationship between clients and their key worker is critical in preventing drop out and that more positive relationships are associated with better outcomes (Ernst et al., 2008; Ilgen et al., 2006; Meier et al., 2006; Ritter et al., 2002). Although contact is only brief and there is little time to establish a therapeutic relationship at the intervention, it is still likely to be important that alcohol intervention workers establish a good rapport with clients for information and advice to be assimilated and acted upon. With one or two exceptions, clients' observations of the delivery of sessions suggested that the ability of the intervention workers to make the clients feel comfortable as well as their openness, empathy and non-judgemental approach was good. The independence of the worker was also highlighted as a critical factor by a number of clients i.e. that the worker was not a police representative or a family member.

*The project has been beneficial – it is related to the relationship that the workers have built up with the custody staff. (Intervention Worker)*

*It was one on one in a small room and quite cosy. There was nothing like police oriented, it was very much a social thing rather than part of your punishment, d'you know what I mean, it wasn't meant to be intimidating or anything, so yeah it was alright. (Scheme D Male)*

*I felt comfortable talking to him. I thought what an interesting job he has. For me it was a relief to talk to someone rather than the police or a doctor. I totally trusted him. I think it is very important that they are independent and not the police or a doctor. He was a really nice guy and very easy to talk to. (Scheme A Male)*

*He mentioned that he was a previous alcoholic you see and that was useful to see somebody who had been through that and come out of it so yeah he was really good at it, the way he came across. (Scheme D Male)*

Scheme B had a high proportion of clients from different ethnic groups, some of whom did not speak English. To address this, some of the interventions were conducted in Polish or Punjabi.

### Content of session

In terms of content, sessions were similar across the four sites and included discussions about current levels of drinking, health impacts, unit values of drinks, reasons why clients had been arrested and strategies to address their drinking and alcohol-related problems. As such most of the key aspects of brief interventions (Kaner et al., 2009; Cabinet Office, 2004)

<sup>27</sup> Two visits were scheduled but at the first, two of the three clients failed to attend the appointment. The second visit was postponed by the scheme and then cancelled.

were covered by the intervention workers although it should be noted that there is no 'standard approach'.

When asked about the content of sessions, few clients reported that they had covered anything to do with the impact of drinking on relationships, or vice versa, social responsibilities, employment or criminal-justice-related issues. Observation of interventions confirmed this view. Theory on motivational interviewing (Miller and Rollnick, 1991) indicates that identifying appropriate 'levers' to encourage behaviour change is essential. Clients who reported changed behaviour often attributed this to personal factors (such as financial pressures, health, family relationships and employment issues), rather than the alcohol intervention, so it is likely that exploring these issues would have been beneficial in some cases. Note that while workers asked about reasons for arrest, on only a few occasions did clients report, or observations suggest, that a clear link was made between alcohol and offending. At scheme A, where interventions were relatively short, completing the AIR comprised the major part of the intervention.

*No not really, it was all just basic things that you see on the TV all the time you know like "You shouldn't drink this many units" or "Binge drinking is a problem in Britain" and all that, everybody knows these kinds of things. But I didn't take in anything I would have remembered. (Scheme A Male)*

*She asked me questions.... how much alcohol did I think I drank in a week, do I think I drink excessively, do I drink everyday. (Scheme A Male)*

*[We] were talking about units of alcohol, you know what a pint is, like Stella, or a glass of wine, Scrumpy Jack. (Scheme A Male)*

*He showed me what all the parts of the body can be affected by alcohol and what can happen in the future if your drinking gets worse. (Scheme D Male)*

*I filled in a questionnaire about how much I drank. (Scheme D Male)*

## The perceived impact of interventions

Stakeholders generally perceived the session to have had a beneficial impact on both offending and alcohol use, although none had any quantitative evidence to support their view. Their assessment was based on anecdotal information such as not seeing many clients returning to the custody suite and that some clients who had received an intervention had contacted the scheme to say that the intervention had reduced their drinking.

*I don't know about impact on reducing re-offending but we found so far that we have very few repeat clients, about eight at the moment out of around 300. (Intervention Manager)*

*They've got to come because it's a condition of bail, they don't know what to expect and a number of people have said, "I'm really glad I came." (Intervention Manager)*

Clients' views were more mixed about the impact of the session on their drinking and alcohol-related behaviour. It is worth noting that memories of the content of the session were often vague, even after prompting, and in a small number of instances, clients could not remember the session at all. Poor memory of the session does not necessarily mean that the intervention had no impact. However, as one of the aims of the alcohol interventions is to impart factual information to enable clients to make informed decisions about their drinking, it does suggest limited effectiveness. It might be expected that shorter interventions would leave less of a lasting memory but feedback suggested this was not the case with clients having difficulty in remembering the details of both longer and shorter sessions (across all sites).

*I can't remember (what was covered), yeah a lot's happened since then, a lot's gone on. I can't remember really, we did talk about quite a few things. (Scheme A Male)*

*It made me think about just how much I was drinking, 'cause I've never thought about it before. (Scheme A Female)*

Clients' views on the usefulness and relevance of the sessions were mixed. A number of clients highlighted the role of the session in prompting reflection on drinking behaviour as

well as the assessment of drinking levels coming as “a shock”. Information provided to clients such as unit content and recommended alcohol levels acted as a ‘refresher’ for some. In contrast, a substantial number of clients questioned the relevance of the session because they felt that they had no issues with alcohol or that they already knew the information provided. This may reflect the fact that the interventions did not generally identify and make use of motivational levers (see Section 0).

A substantial number of clients reported having made changes to their drinking such as reducing the speed at which they drank or the avoidance of certain people or places, but many of these individuals did not attribute the changes to the session, or not wholly. Changes were attributed by clients to personal factors such as financial pressures, health and family relationships or employment-related issues; these factors were also those cited as being the drivers for maintaining behaviour change. However, this does not mean that the intervention had no effect – it may have helped people accept that they needed to change their behaviour and helped them devise strategies for doing this.

*Part of it's the session but it's more me being more determined after that session I don't wanna go back down that road. It's just when you get locked up in them cells, it does it all ... it weren't worth it. And like I was only in there for six hours in the cells but I missed being at home with my girlfriend and my family and girlfriend and my baby so it's hit home not to do it again. (Scheme D Male)*

The role of other criminal justice factors such as tags, curfews or probation involvement in restricting movements and preventing individuals going to certain areas at certain times were also cited by clients. Where the intervention itself was felt to have played a role it was generally in conjunction with these factors and, in particular, the whole experience of arrest and detention. This, and the fact that a number of clients had been through alcohol treatment or awareness raising since the session, makes it difficult to attribute changes in drinking and related behaviour to the alcohol intervention itself.

Previous work around alcohol interventions has suggested that interventions may only be the first step to making a change (Rollnick et al., 1997; Marlatt et al., 1998) and if this is the case then clients may attribute greater pertinence to other factors that come later in the ‘recovery’ process (Watt et al., 2008; Crawford et al., 2004).

Regardless of the reasons why clients had made changes to their alcohol use and related behaviour, a variety of positive outcomes were reported including improved physical and mental health and more constructive personal relationships. These are similar areas of improvement to those noted in health-care-based evaluations of alcohol interventions (Academic ED SBIRT Research Collaborative Group, 2007; Moyer and Finney, 2004; Forsberg et al., 2000).

Reported impacts on offending were less clear; while very few clients reported being in trouble with the police after their intervention, very few also reported extensive offending histories before the intervention. This was borne out by the arrest data and suggests that interventions are unlikely to have a measurable effect on offending behaviour.

*Yeah, I stay away from town and don't drink as much. I go out at nine and don't try to fit in as many drinks as I can. (Scheme A Male)*

*It gives me more energy for when she (daughter) does start walking cause she's already crawling and like I can keep up with her chasing her round the room whereas before when I was drinking a lot I just couldn't be bothered trying getting her. (Scheme D Male)*

*Oh yeah 'cause when I was drinking I wasn't eating properly so I was drinking and there was nothing inside me but since I've knocked that on the head I'm eating properly now. (Scheme C Male)*

*Yeah she's [girlfriend] quite proud of me, before it got to a point where she say, "If any of you start acting strange or funny..." she'd go, but now she's more relaxed when we go out. So she feels more comfortable with me I think when we go out now. (Scheme D Male)*

For a study of this nature, it is important to consider the issue of how evaluation activities can have an impact on clients (Sommers et al., 2006; Daeppen et al., 2007). All of the clients received emails, letters or calls asking them to complete the follow-up AIRs and this may have reinforced the intervention in some way. Furthermore, most of the case-tracking clients spent longer discussing their alcohol use with a member of the evaluation team during the case-tracking interview than they spent with the alcohol worker. Only a small proportion of the Intervention Group were interviewed in this way, but this applied to all clients providing follow-up AIRs (used to assess the impact of interventions on alcohol consumption). It is, of course, difficult to avoid such problems but their possible effect needs to be considered when assessing the impact of schemes.

## Key points

Clients' views of the usefulness and the eventual impact of the alcohol intervention may be adversely affected by their vague memories of the session and the fact that sessions did not seem to identify or make use of motivational levers. Research shows that whether sessions lead to positive life change is likely to be influenced by clients' motivation to change their drinking and an intervention may be only one factor among many in driving change (Daeppen et al., 2007; Shealy et al., 2007; Lincourt et al., 2002). This is supported by the finding that many clients had made changes in their drinking and alcohol-related behaviour but attributed this to factors other than the alcohol intervention. The client's level of motivation to change needs to be central to the intervention (Miller and Rollnick, 1991) as does work to identify what the key 'levers' are for each client e.g. finance, relationships, health. It is important to recognise that the evaluation activities may have reinforced the intervention – particularly where clients had limited recollection of what was discussed.

The issue of where to deliver interventions divided schemes. Table 6 lists the main concerns expressed about delivering interventions in the custody suite and the alternative of using follow-up appointments. There are clearly good arguments for and against each approach but, in the absence of a robust impact assessment for the alternatives, it is not possible to say which is most effective.

**Table 6) Concerns about different delivery models**

Alcohol intervention in custody suite before discharge	Alcohol intervention at follow-up appointment
<ul style="list-style-type: none"> <li>• It can be difficult to recruit staff to work overnight and at weekends in custody suites; police checks impose further constraints.</li> <li>• Using DIP workers is attractive but some felt that this ran the risk of alcohol work becoming lost in the wider DIP agenda.</li> <li>• There was no evidence that alcohol interventions were more effective because they were delivered when the events leading up to the offence were fresh in the client's mind. Indeed, many clients failed to make the connection between their drinking and subsequent arrest. Some also felt they were not in a fit state to receive the information.</li> <li>• Alcohol interventions designed to identify the 'levers' that would motivate clients to change their drinking behaviour are likely to be most effective. If the levers are unconnected with the arrest, there is less benefit in delivering the intervention before clients are discharged.</li> </ul>	<ul style="list-style-type: none"> <li>• Attendance rates were low unless there was an element of compulsion; missed appointments result in inefficient use of staff.</li> <li>• Concerns over the use of conditional bail and conditional caution for referrals need to be resolved and may still not achieve high attendance rates.</li> <li>• Compelling clients to attend sessions may make them less likely to engage with the alcohol intervention.</li> <li>• Screening is needed to ensure that people referred for interventions are likely to benefit from them.</li> <li>• Screening would impose additional work on police officers unless additional resources were provided.</li> <li>• Clients are more likely to attend a follow-up appointment if they have established a rapport with the alcohol worker. This suggests that first contact should be made in the custody suite.</li> </ul>

## 5. Costs of Schemes

This chapter summarises the cost of delivering the pilots over a year, and hence the cost per alcohol intervention.<sup>28</sup> Since there is insufficient evidence of the schemes having a statistically significant effect on arrest rates, it is not appropriate to conduct a cost-benefit analysis. However, a break-even analysis has been performed to indicate the impact that would be needed in order for alcohol interventions to be value for money.

Even when comparisons are made of aggregated cost data (as shown in Table 7), care must still be taken when comparing costs across sites. In particular, costs for administrative support and some management functions are included as 'direct staff costs' in some schemes and as management recharges in 'other costs' for other schemes.<sup>29</sup> Furthermore, the information provided did not allow costs to be separated easily into start-up and ongoing costs. Most of the training costs are likely to be associated with start-up (although some training will be associated with staff turnover and training new staff) but other start-up costs are less easy to identify. For this reason, Table 7 simply shows the estimated overall cost per intervention delivered.

The high costs associated with training for police in scheme D was the result of training being undertaken on overtime with additional travel expenses. At other sites police training appears to have been undertaken during scheduled training sessions and so lower costs were incurred. It is unclear whether the costs provided for scheme C include costs associated with police training, while at scheme B training was factored into normal training cycles and so no costs were reported.

**Table 7) Summary of costs of pilots**

	Scheme A	Scheme B	Scheme C	Scheme D
Staff costs	£133,751	£101,561	£85,668	£110,420
Staff full time (see notes)	3.1	2.3	3.0	3.3
Other costs excluding training	£6,846	£43,968	£21,450	£28,585
Costs associated with training	£2,500	£200	£2,310	£18,667
<b>Total identified costs</b>	<b>£143,000</b>	<b>£146,000</b>	<b>£109,000</b>	<b>£158,000</b>
Interventions delivered	1,275	372	255	275
<b>Average cost per intervention</b>	<b>£110</b>	<b>£390</b>	<b>£430</b>	<b>£570</b>

**Notes:**

- Total identified costs are rounded to the nearest £1,000, while costs per intervention delivered are shown rounded to the nearest £10.
- Staff numbers for scheme A excludes the DAAT strategic lead and admin support (admin support element is not known).  
Staff numbers for scheme C includes one full time for monitoring and admin support.  
Staff numbers for scheme D includes one full time for admin support.
- Training costs for schemes A, B and D are for police only.
- 'Other costs' reported vary widely between schemes. Scheme A provided no breakdown of other costs; however, we were told that office space and IT support were provided at no charge to the scheme. For scheme B, premises costs were approximately £10k, with management recharges accounting for approximately £22k. Scheme B listed several costs not separately identified by other schemes, including recruitment and IT support (together totalling approximately £6k). For scheme C, premises costs were approximately £3k, with management recharges approximately £12k. At scheme D, the breakdown provided does not allow premises or management costs to be identified separately.

<sup>28</sup> The varying length of interventions across schemes was not taken into consideration.

<sup>29</sup> Unfortunately, it is not possible to identify the management costs where they have been included as a recharge, and it is not always possible to identify clearly the management element where it is included in direct staff costs.

The total identified costs for starting up the pilots and operating them for 12 months are of a similar order across the schemes, with costs for schemes A, B and D ranging from £143k to £158k, while costs at scheme C appear lower at £109k. The costs were dominated by staff costs and these were highest in scheme A which employed the equivalent to 3.1 full-time staff plus time spent by the DAAT strategic lead and admin support. Staff numbers on schemes C and D include one full-time employee for monitoring and admin support. It is notable that scheme A employed the equivalent of three alcohol workers and delivered approximately five times the number of interventions as schemes C and D (each of which employed approximately two full-time workers).

If training costs are excluded (which are dominated by police overtime on scheme D), the ratio of staff to other costs for scheme D is very similar to that for scheme C, while scheme B's 'other costs' remain a slightly higher proportion of total costs. Scheme A's 'other costs' are noticeably lower than other schemes and, as the note in the table explains, one reason for this is that the scheme was not charged for office space at the custody suite or for IT.

As might be expected given the high number of interventions delivered by scheme A, costs per intervention for that scheme are the lowest across the four sites, at £110 per intervention, followed by scheme B at £390 per intervention, scheme C at £430<sup>30</sup> and scheme D at £570 per intervention.

## Break even analysis

For the break-even analysis, the costs per intervention were used together with estimates of costs of crime to establish the reductions in numbers of arrests that would be required for the schemes to break even. Cost of crime data were provided by the Home Office, together with multipliers for the numbers of recorded crimes underlying each arrest, and the numbers of actual offences underlying each recorded crime. Using these values, upper and lower estimates of the average cost of crime were derived for the mix of alcohol-related offences recorded for the combined Intervention Group of the four schemes. Comparing the upper and lower estimates to the average cost of an intervention on each scheme showed the reduction in arrests that would have been needed (given the number of cases seen) for each scheme to have broken even. Further detail is provided in Appendix 1.

These estimates are subject to a number of caveats, but indicate the magnitude of the reduction in average arrests required for the schemes to break even. Table 8 shows the numbers of reductions in arrests (over a period of six months) required per 100 interventions delivered in order to break even, and compares this with the actual reduction in arrests.

**Table 8) Numbers of arrests per 100 interventions for break even**

	Scheme A	Scheme B	Scheme C	Scheme D
Observed reduction*	-3.5	Not known	13	0.6
To break even using upper estimate of cost of crime	0.6	2.0	2.2	3.0
To break even using lower estimate of cost of crime	1.2	4.1	4.5	6.0

\* A negative reduction indicates that an increase was observed. Also note that none of the observed changes was statistically significant, and that the observed difference for scheme C was driven by an outlying data point.

<sup>30</sup> The number of interventions delivered is probably an underestimate for scheme C (because of data quality issues), so the true unit cost may be lower.

The table shows that on scheme D, for example, the alcohol interventions achieved an average reduction of 0.6 arrests per 100 interventions (calculated by the difference of differences method). Due to the small sample size there is considerable uncertainty over this figure but the break-even analysis suggests that the average reduction would need to be approximately five times higher (at least 3.0 arrests per 100 interventions) to be cost effective. If the lower estimated cost of crime is used, the reduction would need to be almost ten times higher (at least 6.0 arrests per 100 interventions) to break even.

While the table appears to suggest that scheme C broke even, the observed reduction in the arrest rate was not statistically significant, and (as noted in Section 0) the observed reduction was strongly influenced by one outlying data point. There are other caveats that must be noted.

- The analysis assumes that the intervention is equally effective for all arrest types (i.e. the mix of offence types 'saved' is the same as that for which people were arrested across the schemes).
- The estimates contained in 'The economic and social cost of crime against individuals and households' (Dubourg and Hamed, 2005) are the most recent estimates of the cost of crime published by the Home Office. These have, therefore, been up-rated to 2008/09 prices to account for inflation using the treasury GDP deflator series. Also, cost-of-crime estimates for public order, drink driving and drunk and disorderly offences were not provided in the main source used and have been separately estimated.
- Multipliers to estimate the total crime represented by arrests were not available for all offence types of interest.

## Key points

The overall cost per intervention delivered (including start-up costs) varied from £110 to £570. This range would reduce slightly if start-up costs were excluded (assuming that they are broadly similar across the four schemes) but scheme A is likely to remain significantly cheaper, per intervention delivered, because of the relatively high volume of cases.

The difference in overall costs does not appear to reflect any fundamental differences in the delivery model, but are largely explained by staff costs. Scheme A delivered substantially higher numbers of interventions than other schemes, despite just having approximately 50 per cent more alcohol workers.

Future evaluation would be aided by collection of cost data in a consistent format from the beginning of the schemes, with start-up costs being separated from ongoing costs.

Break-even analysis suggests that the schemes would have needed to result in a reduction of between 0.6 and 6.0 arrests for every 100 interventions delivered. That is, reductions beyond any that would occur in the absence of the interventions.

## 6. Conclusions

A number of conclusions have been drawn concerning the application of and benefits from offering alcohol brief interventions in a criminal justice setting. In addition, a number of useful lessons have been learnt about running AAR schemes which have been fed back to the Home Office and were used to inform guidance published by the Home Office on how to set up such schemes (Home Office, 2009). Lessons learnt from conducting the evaluation were also fed back to the Home Office to help improve the evaluation of the Phase 2 pilots.

### Screening and referral

The evaluation has provided valuable information on the profile of people arrested for alcohol-related offences and how these compare with the profile of arrestees generally. Chapter two provides detailed figures but overall:

- 40 per cent of offenders were aged 18–24 years old;
- 91 per cent of clients were White and 83 per cent were male;
- 38 per cent of offenders were dependent drinkers, with hazardous drinkers being the next largest group (at 35%); and
- 34 per cent of clients were arrested for violence offences, with public order offences (18%) and drunk and disorderly (16%) being the next most common offence types.

There were notable differences between schemes with scheme B seeing a much more ethnically diverse population and scheme C seeing a higher proportion of dependent drinkers. The analysis also found a strong correlation between the level of alcohol consumption and age, which could be useful in identifying locations likely to be seeing higher numbers of dependent, harmful or hazardous drinkers.

Over half of the clients receiving alcohol interventions were classified as being either ‘no risk’ or dependent drinkers; groups thought least likely to benefit from alcohol interventions. This raises two issues: should alcohol interventions be given to dependent drinkers and what is the most effective way of screening clients?

- Dependent drinkers reported a greater willingness to change than other groups and showed a slightly greater reduction in their AUDIT C score than harmful and hazardous drinkers. This suggests that dependent drinkers may be more responsive to interventions than expected but in the absence of a control group for alcohol consumption and inconclusive findings on re-offending it is not possible to draw any firm conclusions.
- The AUDIT questionnaire was used as part of the intervention instead of screening clients. Schemes need to decide whether to screen clients before giving them interventions, in which case a quicker alternative to the AUDIT tool would be helpful, or to see all clients and refer dependent drinkers onto structured alcohol treatment services.

All four schemes planned to refer between 20 per cent and 25 per cent of clients by conditional cautions but this route was rarely used because it was viewed by many stakeholders as being overly onerous in terms of paperwork. Conditional bail was used extensively by scheme D and, to a lesser extent, by scheme C, but other schemes had concerns about enforcing a breach of the bail condition. As a result, over 80 per cent of interventions were as a result of voluntary referrals and most of these occurred in the custody suite before clients had been discharged. This model ensured higher numbers of interventions delivered but some stakeholders expressed concerns about whether the interventions would be as effective.

### **Effectiveness of interventions**

Clients were generally content for the alcohol intervention to occur in the custody suite and there was no evidence that these were any less memorable or effective than community-based interventions. The research suggests that it is the content of the intervention, rather than its location, which is likely to be most significant.

Interventions delivered in custody suites were generally shorter than ones delivered elsewhere (in scheme D) so had less time to identify motivational 'levers' that could be used to help clients recognise that they need to change their behaviour and motivate them to do so. Despite having more time to explore these issues in scheme D, the focus still tended to be on alcohol units, potential health problems and strategies for reducing alcohol consumption. None of the schemes appeared to explore the impact of alcohol consumption on factors such as financial pressures, family relationships, social responsibilities or employment issues. Nevertheless, where clients reported changing their behaviour, these were often the factors they identified as being their main motivation. Tapping into these issues is likely to increase the effectiveness of alcohol interventions.

### **Re-offending**

The primary aim of each AAR scheme was to reduce re-offending, and this was assessed by comparing the change in arrest rates<sup>31</sup> for an Intervention Group that had received the intervention to a retrospectively matched Control Group selected from the police force area before the pilot schemes were introduced. The data showed that, overall, the reduction in the arrest rate for the Intervention Group was marginally more than for the Control Group, suggesting a potentially beneficial effect of alcohol interventions. However, the sample sizes were such that the reduction was not statistically significant; a larger sample is therefore needed to determine whether the reduction in arrest rates is genuine. Segmenting the clients in different ways (e.g. by scheme, AUDIT band, gender and referral type) did not identify any groups that exhibited a statistically significant change in arrest rate.

Analysis indicates that the schemes would have needed to reduce the number of arrests in the six-month period following the intervention<sup>32</sup> by between 0.6 and 6.0 arrests per 100 clients in order to be value for money. For comparison, the overall reduction in arrest rate was 0.5 arrests per 100 clients, although this was not a statistically significant result.

A key finding from the analysis is that the re-arrest rate for people arrested for alcohol-related offences is low. This means that the change in the arrest rate will be small and large sample sizes will be needed to detect a statistically significant change in the arrest rate.

### **Alcohol consumption**

Schemes A, B and C all saw reductions in alcohol consumption, and this change was statistically significant for the first two schemes. Furthermore, significant reductions were seen in both males and females, across all age bands and all AUDIT bands (except for no risk drinkers). Interestingly, despite not being in the target group, dependent drinkers saw a statistically significant reduction in alcohol consumption.

However, these encouraging results should be treated with caution. In the absence of a control group it is not possible to assess how much of the reduction in consumption is attributable to the alcohol intervention rather than the experience of being arrested or other treatment services. Previous controlled studies into alcohol brief interventions have seen similar reductions in AUDIT scores but these were observed in both the intervention and

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<sup>31</sup> Since not every offence is detected, let alone results in an arrest, this is an imperfect measure but is the best available.

<sup>32</sup> This is the reduction that might be attributed to the scheme, as measured by the difference between Intervention and Control Groups.

control groups, which suggests that the reductions were attributable to something other than the intervention. Furthermore, low follow-up rates meant that the sample sizes were small.

### **Points for consideration**

The evaluation has provided useful information on the profile of people receiving alcohol interventions and the challenges of delivering these in custody suites and in the community. It has also identified a number of lessons that would benefit future pilot schemes and evaluations.

#### **Scheme design**

Where the intervention is delivered appears less important than what it contains. However, if interventions are delivered away from the custody suite, attention must be given to encouraging clients to attend (whether voluntarily or using conditional bail/caution). Success of schemes relies on the early and close involvement of the police and, where appropriate, the CPS.

Screening of clients is needed to avoid resources being employed on people who would not benefit from the scheme or where the intervention could be counter-productive. All four schemes delivered a small number of interventions to clients classified as 'no risk' on the AUDIT scale. In addition, a high proportion of cases were dependent drinkers although this group was not expected to respond well to alcohol interventions and scheme B intended to screen them out.<sup>33</sup> However, dependent drinkers showed greater willingness to change and a greater reduction in alcohol consumption than other groups. This suggests that there is little need to screen clients seen in the custody suite and that the time would be better spent identifying ways of getting clients to recognise that they need to change their behaviour. However, the difficulty in getting clients to attend community-based interventions may mean that screening is more important here and may also perform a useful role in helping to engage clients.

#### **Evaluation methodology**

The low re-arrest rates for clients receiving alcohol interventions means that large sample sizes are needed to establish the effectiveness of schemes on re-offending. Larger sample sizes are also needed to ensure that follow-up questionnaires can draw statistically significant conclusions and to allow stratified sampling of case study clients.

Importantly, a control group is needed to determine whether encouraging results on reduced alcohol consumption is attributable to the alcohol interventions or other factors.

The AIR provided valuable information for the evaluation but was time-consuming to complete and, as a result, the intervention tended to be based around the form rather than a more conversational approach which would have helped identify motivational levers. It is important to ensure that the evaluation methodology does not inhibit effective delivery of the intervention.

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<sup>33</sup> Despite the intention to screen them out, almost one-quarter of cases on scheme B were dependent drinkers.

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## Appendix 1: Evaluation Methodology

The evaluation comprised three main components.

- A process evaluation based on:
  - a review of information provided by the schemes and their service level agreements to understand the original intentions;
  - interviews with stakeholders and a case-tracking sample of clients, and observations of the brief interventions being delivered, to see how the schemes worked in practice; and
  - analysis of caseload data provided via the AIRs and cost data provided by the schemes;
- An outcome analysis based on:
  - the responses on AIRs completed at the time of the intervention with those completed six months later to identify changes in alcohol consumption; and
  - numbers of arrests before and after the alcohol intervention for those who received interventions (the Intervention Group) and before and after an index arrest (i.e. an arrest chosen as a surrogate for the intervention) for a Control Group, to quantify the schemes' impact on arrest rates (a proxy for re-offending);
- A break-even analysis based on the average cost of crimes committed by the schemes' clients and the average cost of each intervention.

This appendix describes how we collated and analysed the data in each area.

### Preparatory work

#### Ethical clearance

A key task in the early stages of the project was to gain ethical clearance for the evaluation. This was provided by the Chair of Liverpool John Moores University Ethics Committee. As one of the schemes involved use of NHS facilities and staff, guidance was also sought from the Chair of the relevant NHS Ethics Board as to the necessity of a submission to the board. The Chair decided that approval from the LJMU committee would be sufficient as the project was an evaluation.

#### Data handling

A secure database was developed to record the AIR data and to support the tasks of contacting participants for both the case-tracking study and follow-up AIRs. Particular care was taken to ensure that confidentiality was maintained and that data were used only in ways that clients had consented to. For example, the two parts of the AIR (one containing information used to identify and contact the offender; and one containing the responses to questions needed for the evaluation) were always kept separately as both hard copies and in separate databases. N.B. Upon completion of the project, all of the AIRs will be destroyed and the database (including all backup copies) will be deleted.

### Process evaluation

#### Background research

To inform the critical appraisal of the four schemes and allow comparison of observed practice with theory, a literature review was conducted on the theory of behaviour change. This identified a number of attributes that need to be considered when delivering brief interventions. In addition, to understand the background to using brief interventions in a criminal justice setting and any parallels with work being performed in the health sector,

representatives of the Department of Health, Alcohol Concern and the SIPS Programme<sup>34</sup> were interviewed.

### Stakeholder interviews

Forty stakeholders directly involved in the delivery of the four pilot schemes were interviewed as summarised in Table A1.9. Interviewees were purposively selected to ensure a cross-section of the schemes and organisations involved. The aims of the interviews were to explore how well the pilot scheme was working, whether the provider was working in partnership with local police and other stakeholders and any barriers to realising the full value of the initiative. Opportunities to maximise the pilot schemes' impacts were also captured, as were any wider lessons.

**Table A1.9) Number of stakeholder interviews**

Scheme	Scheme A	Scheme B	Scheme C	Scheme D	Total
Crown Prosecution Service		1	1	1	3
Intervention Manager	2	3	1	2*	8
Intervention Worker	4	4	6	1	15
Police	2	5	3	1*	11
<b>Total</b>	<b>8</b>	<b>13</b>	<b>11</b>	<b>5</b>	<b>40</b>

\* The police interview and one of the intervention manager interviews involved two interviewees

To ensure that the interviews addressed the key issues, they all followed a topic guide which included questions about:

- whether the pilot scheme had been successful in meeting its aims and objectives;
- the perceived impact the scheme has had on offending, alcohol consumption and general health;
- lessons that could be learned from implementation of the pilot scheme;
- whether there were any potential synergies with DIP schemes;
- whether the scheme was targeting the right people, how many clients were referred on to other services and how effective this was;
- whether the alcohol workers, DAAT, police and CPS were working together effectively; and
- whether the scheme should continue to be funded and, if so, what changes should be made to increase its effectiveness.

Interviews were recorded and transcribed; the transcripts were then subjected to thematic analysis.

### Case-tracking study

Case-tracking interviews were conducted to provide an insight into clients' experiences of the delivery of the alcohol intervention sessions and their views on the impact this had on their alcohol use and associated behaviour. The intention was to recruit 25 people who had received an alcohol intervention from each of the four schemes. To ensure a good cross-section, candidates for the case-tracking study were selected using stratified sampling based on gender, age band and type of offence.

Contact was attempted by letter, phone and email (depending on the contact details recorded on the AIRs) but the response rate was very low. To ensure that a reasonable

<sup>34</sup> Screening and Intervention Programme for Sensible drinking (SIPS) is testing the use of brief interventions in GP surgeries, A&E departments and by probation services.

number of interviews were completed the stratification was abandoned and all clients whose drinking was assessed as hazardous or harmful were invited to participate. Even so, it proved impossible to recruit 25 case-tracking participants for any of the schemes. There were particular problems on scheme B which may have been due, in part, to the large numbers of clients for whom English was not their first language. To try to address this issue the letter to clients was translated into Polish where appropriate, but this was also unsuccessful. The numbers of clients who did not respond to contact attempts, declined to be interviewed or were successfully interviewed are shown in Table A1.10 for each scheme.

**Table A1.10) Case-tracking interviews attempted and completed**

	Three-month interviews			Six-month interviews*		
	No response	Declined	Interviewed	No response	Declined	Interviewed
Scheme A	191	13	20	11	1	8
Scheme B	73	0	0	0	0	0
Scheme C	27	4	9	2	3	4
Scheme D	43	4	12	6	2	4
<b>Totals</b>	<b>334</b>	<b>21</b>	<b>41</b>	<b>19</b>	<b>6</b>	<b>16</b>

\* Only clients interviewed at three months were followed up at six months.

Clients were interviewed three months after receiving the intervention and again after six months.<sup>35</sup> To ensure consistency each interview followed an agreed questionnaire. It had been intended to perform the interviews in person (using pairs of researchers for safety reasons) but many of the clients preferred to be interviewed by telephone instead. As a result the interviews were performed using mixed methodologies.

### Observing brief interventions

To see how the interventions were delivered in practice, researchers visited a number of custody suites at peak times and observed brief interventions being delivered in either the custody suite or, in the case of scheme D, at a subsequent appointment. These observations were dependent on the judgement of the intervention worker as to the suitability of the client for being observed, and the consent of the client.

In total, 22 interventions were observed<sup>36</sup> and Figure A1.5 shows that the duration of these was typically 10–20 minutes. Only one intervention was observed on scheme D due to a steep decline in the number of referrals for interventions in November and December 2008. Attempts to arrange further observations in January and February 2009 were ultimately unsuccessful.

At each observation, the researcher recorded details on a standard proforma comprising 16 questions. Some additional observations were made relating to the gathering of information for the evaluation.

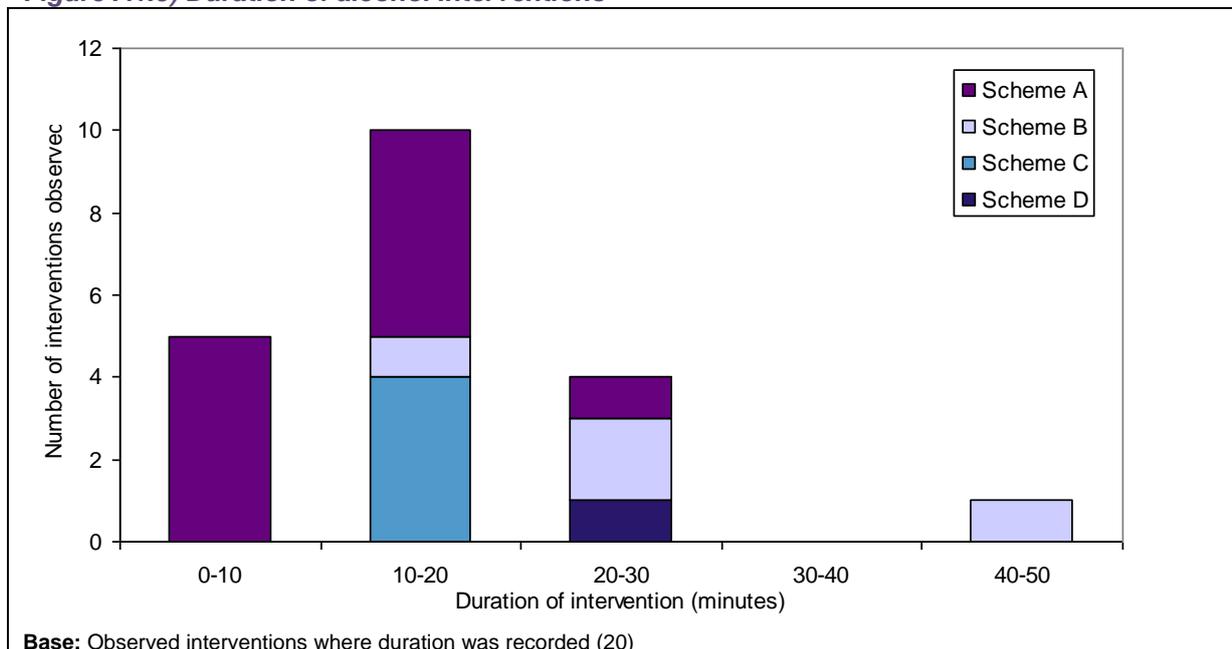
- The explanations of the consents requested on the AIR form varied widely; it may be worth providing guidance to schemes on this, and including this explicitly in any training provided.
- In some instances, individual workers did not ask questions from the AIR in the intended order – in particular the readiness to change measure was often asked at the end of the intervention, rather than before the AUDIT questionnaire. On one

<sup>35</sup> Of the 41 clients interviewed at three months, 19 could not be contacted again and six declined a second interview – mainly on the grounds that nothing had changed since the interview at three months.

<sup>36</sup> Eleven of the observed interventions were on scheme A, six on scheme B, four on scheme C and one on scheme D.

occasion an alcohol worker omitted to ask the question, made their own assessment of the client's motivation and completed the measure after the intervention.

**Figure A1.5) Duration of alcohol interventions**



### Alcohol Intervention Records

As part of the alcohol intervention, an AIR was completed by case workers. This provided workers with a tool for the intervention but also contained data pertinent to the evaluation. Box A1.11 summarises the information collected on the AIR.

#### Box A1.11) Description of the Alcohol Intervention Record

The AIR, or Alcohol Intervention Record, was an eight-page questionnaire in two parts.

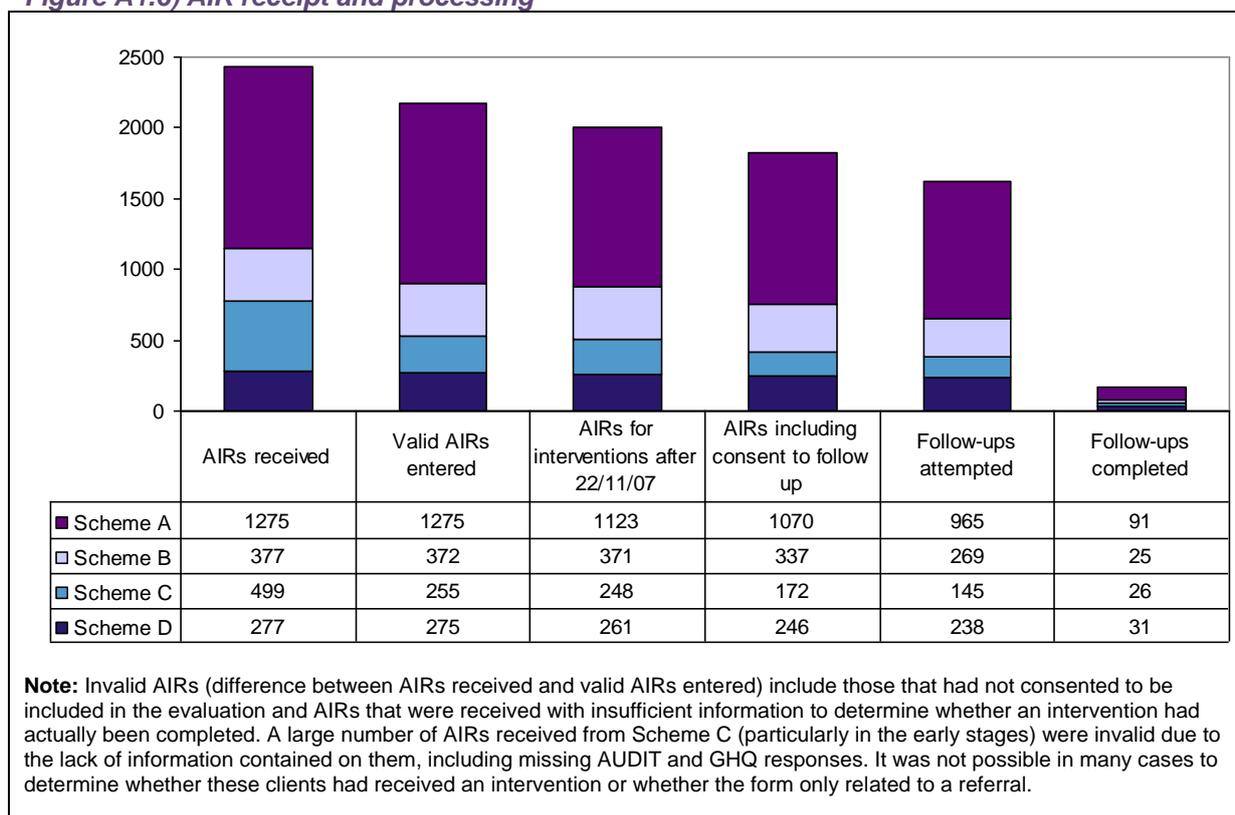
- Part A contained contact details, gender and date of birth.
- Part B contained:
  - referral details – offence which lead to the arrest (according to the alcohol worker) , referral route and dates of the interventions;
  - client details – first language, employment status and highest academic achievement;
  - client background – various questions about their marital status, relationships and health;
  - religion;
  - ethnic group;
  - a 'readiness to change' scale;
  - the ten-point AUDIT questionnaire;
  - the General Health Questionnaire;
  - further action – whether referral to another service is required and whether a letter confirming interventions is needed for court purposes;
  - self-reported offending data; and
  - consent – responses to three questions concerning (a) allowing the AIR to be included in the evaluation, (b) being contacted by the evaluation team and (c) accessing their arrest data.

For data security reasons the two parts were always kept separate. The AIRs were completed by the alcohol worker at first contact or when delivering the intervention.

A modified AIR was also used in follow-up interviews with clients in order to assess changes occurring since the intervention.

Figure A1.6 summarises the numbers of AIRs received, whether they were included in the analysis and the number successfully followed up at six months. Due to low rates of referrals at the start of the pilot (while processes were becoming embedded) it was agreed that only forms after the 22 November 2007 were to be included in analyses. Low throughput meant that this had little impact on the overall number of interventions.

**Figure A1.6) AIR receipt and processing**



According to the AIRs received, scheme A completed the largest numbers of alcohol interventions, 58 per cent of the total number of interventions delivered across all four pilot sites. Since the number of referrals was not recorded by the schemes, the proportion of referrals by type of referral and scheme is not known.

### Follow-up AIRs

Of the 1,617 follow-ups attempted, 173 six-month follow-up AIRs were completed, representing a response rate of 11 per cent. The number of contact attempts made depended on the contact details provided. If the AIR provided a full address, telephone number and email address six contact attempts were made (two per communication method). Common reasons for being unable to follow clients up were the absence of sufficient contact details on the AIRs and invalid addresses that resulted in post being returned as undeliverable. Other reasons included clients dying, being in prison and living away.

As the response rate to follow-up attempts was low, it is possible that findings for the responding group are not consistent with those that would be expected for all clients seen by the schemes. It is not possible to completely counteract this problem but analysis was

conducted to examine whether, at the time of their interventions, clients who did not respond at follow-up were different from those who did respond.

Statistical tests showed no significant difference in AUDIT scores or GHQ scores between the two groups. However, clients in the non-response group were significantly younger than responding clients. Analysis showed that there was no significant difference in the gender profile of the two groups. The offence profiles for the two groups were also similar, although:

- the non-response group included a slightly higher proportion of acquisitive and criminal damage offences (11% and 12% respectively, compared with 7% and 7% in the response group); and
- the response group had a slightly higher proportion of violence and drunk and disorderly offences (36% and 20% compared with 31% and 16% in the non-response group).

These differences are unlikely to have a material effect on the evaluation findings, but are reported for completeness.

## Outcome analysis

In order to assess the effectiveness of the schemes, the initial and follow-up AIRs were analysed to quantify changes in alcohol consumption<sup>37</sup> and arrest data were used to calculate the impact on re-offending.

### Alcohol consumption

Changes in drinking behaviour were measured using responses to the AUDIT questionnaire on the initial and follow-up AIRs. The initial AIR was completed by the alcohol worker at the time of the first intervention. Follow-up AIRs were completed six months later via post or by telephone, depending on the client's preferred method of contact.

Using the responses, a composite score was used to classify clients as being either no risk, hazardous, harmful or dependent drinkers. Analysis was also conducted against AUDIT-C, the shortened version of the measure that contains only the consumption items. This is a more useful tool for investigating changes over time as it deals with current consumption rather than the longer-term impacts of drinking as investigated by other items on the full AUDIT questionnaire<sup>38</sup>.

During planning for the evaluation it became clear that it would not be possible to collect AIR data from a non-intervention control group. As a result, it is not possible to say whether changes in alcohol consumption were caused solely by the intervention; many other factors could have caused this, including the act of being arrested.

### Re-arrest rates

The primary aim of the schemes was to reduce alcohol-related offending, and the key measure of success was a reduction in the arrest rate for people receiving the interventions. Given limitations around constructing a suitable control group outside of the pilot areas, it was decided to create a retrospective control group from people arrested for similar offences prior to the schemes being launched. By using offenders from the same area, the differences between the Intervention Group and the Control Group (such as local variations in alcohol policies and levels of alcohol-related offending) were minimised. The main difficulty with this

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<sup>37</sup> It was also intended to use the AIRs to measure changes in health, using the General Health Questionnaire, and changes in self-reported offending. However, in both cases the quality of the data provided was too poor to be utilised in the outcome evaluation.

<sup>38</sup> In particular, some questions on the full AUDIT questionnaire refer to the "last 12 months". Since the follow-up questionnaire was completed six months after the intervention, there is an overlap between the two "last 12-month" periods.

approach was that it was not known whether the people in the Control Group had been arrested for alcohol-related offences. The only practical option was to choose offence types and times of arrest that would mean that alcohol was likely to have been a factor.

Calculating the change in arrest rates involved performing three steps.

### **Step 1: Analyse the Intervention Group and create an equivalent Control Group**

The members of the Control Group were chosen to match individuals in the Intervention Group of the same gender, who were in the same age band (<20, 20–24, 25–29, 30–39 and 40+ years old) and who had committed a similar offence. The offences recorded on the AIRs were mapped onto one of the following offence types: violence, public order, drink driving, criminal damage, drunk and disorderly, acquisitive, warrant/breach offences, other driving offences (i.e. excluding drink driving), drugs, sexual, weapons and ‘no category applied’. Five of these categories (violence, public order, drink driving, criminal damage and drunk and disorderly) were considered to be suitable proxies for alcohol-related offending and so the Control Group was selected using those offence types.

The following details were then extracted from the AIR database for the Intervention Group:

- a unique identifier (created to allow arrest data to be transmitted without personal details);
- arrestee initials, date of birth and gender (to identify clients in the police databases);
- the date of first contact or the date of the first intervention;
- the offences for which they were arrested; and
- the specified offence type.

In addition to these data, a table was created showing the number of cases needed for each combination of gender, age band and offence type in the Control Group.

### **Step 2: Collate and analyse the arrest data**

For each Intervention Group member the local arrest database was searched<sup>39</sup> to find the index arrest and confirm that the individual should be included. The process is summarised in the text box.

#### **Process for selecting the Intervention Groups**

Intervention Group members were matched against their arrest records by identifying an arrest by someone with the same initials, gender and date of birth occurring shortly before the date of first contact as recorded on the AIR form. Not all of the index arrests could be identified. Of the 210 people in the original Intervention Group for scheme C, only 141 had an arrest matching these criteria. Similarly, for scheme D, only 230 of the 243 entries could be matched.

Having identified the index arrest, the offence type on the AIR form was checked against the police records and, if different, was changed to match the police data. This process resulted in 32 individuals being removed from the Intervention Group for scheme D because the index arrest was no longer one of the offences identified as being likely to be alcohol related. Fortunately, none of the members in the scheme C Intervention Group was affected so the eventual Intervention Group sizes were 141 for scheme C and 198 for scheme D.

For scheme A, there were 995 individuals in the initial Intervention Group and 936 were found in the arrest records. Removing people whose offence type did not match one of the five included in the evaluation reduced this to 716 people and two more were eventually removed to ensure that the Intervention Group numbers matched those in the Control Group in all categories. This left a total of 714 individuals in the scheme A Intervention Group (and the same number in the Control Group).

<sup>39</sup> For schemes C and D the police provided arrest data to the evaluation team which then performed the analysis. For scheme A, police analysts selected the Control Group and extracted the arrest data.

Having done this, the database was searched to identify all arrests that occurred in the six months before and six months after the date of first contact or the date of the first intervention.<sup>40</sup>

For each arrest the following details were captured:

- the date and time of the arrest;
- the offences they were arrested for;
- the status of the alcohol flag;<sup>41</sup>
- the outcome of the arrest (no further action, caution, fixed penalty, charge).

For the Control Group it was necessary to identify offenders who were of the right gender and age band, and who had committed an offence of the same type as each member of the Intervention Group. To help ensure that the Control Group was made up of alcohol-related offences:

- when matching drunk and disorderly or drink driving offences, the time of the offence was not significant and the Control Group was selected from any arrest for the offence;
- when matching criminal damage, public order and violence offences, these were selected from arrests where either the alcohol flag was set or they had occurred between 9.00pm and 5:59am (i.e. during the night time economy) because these were more likely to be alcohol related.

Importantly, to ensure that the members of the Control Group had not subsequently received an alcohol intervention, the index arrest (i.e. the arrest chosen as the surrogate for the intervention) had to occur in the period 22 June 2006 to 21 May 2007.

### **Step 3: Calculate the change in arrest rate for the two groups**

For each Intervention and Control Group member the numbers of arrests were counted for the six months before the index arrest (pre-arrests) and the six months after the arrest (post-arrests). The 'index arrest' was excluded from the number of pre-arrests and post-arrests because it would simply increase the average number of arrests by one and, since it would apply equally to the Intervention and Control Groups, would cancel out when the difference of differences was calculated. The difference (pre-arrests minus post-arrests) is then a measure of the change in arrest rate and the average difference per individual was calculated for each group. Subtracting this difference for any treatment group of interest (e.g. those receiving interventions in scheme C) from the difference for the Control Group provides the 'difference of differences'. This figure represents the average change in arrests attributable to the alcohol intervention for a particular group of clients.

The statistical significance of the 'difference of differences' was tested using a permutation test, as carried out by the 'permute' command in the Stata statistical package<sup>42</sup>. This was used to calculate the probability (P) that the result would have occurred if the Intervention and Control Groups were the same population. If the probability was less than five per cent the result was considered to be statistically significant.

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<sup>40</sup> In all but one case the PNC identifier associated with the index arrest was used to identify the pre-arrests and post-arrests. For the case where this was not possible, the match was achieved using the client's initials, gender and date of birth.

<sup>41</sup> Arrest records include an alcohol 'flag' indicating whether the arrest was considered to be alcohol related. However, this is often not completed, so the absence of the flag does not reliably indicate that an arrest was not alcohol related.

<sup>42</sup> Unlike, say, the t-test for the significance of a difference between means, which assumes that the distributions are normal, the permutation test is non-parametric, i.e. it does not assume a particular form for the distributions. This makes it particularly useful in the present case, where the distribution of differences is in fact discrete.

### Analysis of cost data

To ensure that detailed cost information was captured in a consistent way, each scheme was asked to complete a cost-recording spreadsheet retrospectively (see Table A1.12). Notable differences between schemes in the scope of costs included, or apparent gaps in the data, were queried with the schemes. The costs were then compared across the schemes and used to calculate the average cost for each intervention delivered.

### Break-even analysis

Cost-of-crime data for each of the offence types of interest were supplied by the Home Office Economic and Resource Analysis (ERA) and were estimated as follows. In all cases, a GDP deflator was used to uprate the costs to 2008/09 prices.

- For violence, a weighted average cost of crime was calculated based on unit cost estimates for 'wounding' and 'common assault' taken from online report (OLR) 30/05 (Dubourg and Hamed, 2005).
- For criminal damage cost estimates were taken directly from OLR 30/05.
- For public order, drink driving and drunk and disorderly offences, the criminal justice system element of the cost of criminal damage offences was used and adjusted for the higher probability of incurring costs once crime is recorded.

To allow the break-even analysis to be performed, it was necessary to estimate the numbers of crimes represented by each arrest. In this study each arrest was assumed to represent C crimes, estimated as:

$$C = M_{ar} \times M_{rt} \times X_a$$

Where:

- $M_{ar}$  = multiplier from arrests to recorded crimes, i.e. the number of recorded crimes for a given offence type divided by the number of arrests for that offence
- $M_{rt}$  = multiplier from recorded crimes to total crime
- $X_a$  = the proportion of total crime committed by those who are arrested

Estimates for each of these were provided for each offence type by the Home Office; to ensure consistency, all multipliers were derived from data from 2003/04.

- Estimates of  $X_a$  were from internal analysis by ERA (based on Walker *et al.* 2009, Table 2). Upper and lower estimates of  $X_a$  were used to produce upper and lower estimates of the number of crimes represented by each arrest. For the lower bound, we assume each arrestee is arrested only once per year; and for the upper bound we use the fraction of total crime committed by those who are arrested, within a 12-month period.
- The  $M_{ar}$  estimates were taken from a Ministry of Justice statistic bulletin (Ministry of Justice, 2008).
- The  $M_{rt}$  multipliers for violence and criminal damage were taken from OLR 30/05. Since the unit costs for public order, drink driving, and drunk and disorderly offences had been adjusted for the higher probability of incurring costs once crime is recorded, the cost was effectively the cost per recorded crime (rather than total crime). As a result the multiplier for these offences was 'one'.

Table A1.12: Example of spreadsheet used to capture cost data for schemes

Costs per full-time equivalent employee						
Grade/ role/ other reference or category	Pay cost per fte £ per year	Non-pay costs (employer's NI etc) £ per year	Total per fte (employer's NI etc) £ per year	Total staff time to 22 Sep 08 person-months	Total staff costs to 22 Sep 08	Comments
staff type 1	£15,000	£2,500	£17,500	10	£14,583	this is an example row only
			£0		£0	
Project Co ordinator	£31,708	£3,329	£35,037	12	£35,037	To 30 September
Substance Misuse Worker	£25,940	£2,724	£28,664	12	£28,664	To 30 September
Monitoring Officer (0.5 WTE)	£15,938	£1,674	£17,612	6	£8,806	To 30 September
Admin Support (0.5 WTE)	£14,480	£1,520	£16,000	6	£8,000	To 30 September
		£0	£0		£0	
		£0	£0		£0	
			£0		£0	
			£0		£0	
			£0		£0	
<b>TOTAL STAFF COSTS</b>				36	£80,507	
OTHER COSTS to 22 Sep 08 (or to end of September if more convenient - please add comment in column G to clarify)						
Description	Date or date range	Cost per unit £	Description of unit	Number of units	Total cost	Comments
Room in building A	Nov-07	50	room, 3 hours	4	£200	3-hr room hire weekly for 4 weeks in November 07 THIS IS AN EXAMPLE ROW ONLY
Inpatient Detox		£ 16,800		1	£16,800	excluded from costs by MB
Travel & Subsistence		£ 5,052		1	£5,052	
Rent & Rates		£ 2,929		1	£2,929	
Training		£ 2,310		1	£2,310	
Office Costs		£ 472		1	£472	
Management Charge		£ 11,347		1	£11,347	10.5% uplift to cover Finance, HR support etc
					£0	
					£0	
					£0	
					£0	
					£0	
<b>Total other costs</b>					£22,110	

Estimates of unit costs of crime were combined with estimates of total crimes represented by arrests and information on the mix of offence types for arrestees receiving interventions to produce upper and lower estimates of the weighted average cost of crime for use in this study. The upper estimate thus derived is £19,100 per arrest, while the lower estimate is £9,560 per arrest (both rounded to three significant figures). These estimates assume that only those receiving interventions are affected by those interventions, while the upper and lower estimates take account of the fact that some arrestees may commit some crimes for which they are not arrested.

Note that estimates are sensitive to the multipliers used. It was not possible to estimate multipliers for all of the relevant alcohol-related offences since they are neither all notifiable offences nor British Crime Survey offences. Multipliers were therefore based on the most similar offence type for which data were available. For example, the multiplier  $M_{ar}$  for violence against the person (VATP) uses the recorded crime definition of VATP which is not the same as that used in the AAR pilot (which includes only wounding and common assault). Note also that estimates of  $X_a$  are based on the percentage of crime committed by those who get arrested within a 12-month period, while we are looking at a six-month period. The reduction in the number of arrests per person that would be required to achieve break even for a given scheme, over a six-month period,  $R$ , is then determined by:

$R = I_c / C_c$ <p>Where</p> <ul style="list-style-type: none"> <li>• <math>I_c</math> = the average cost of an intervention for that scheme</li> <li>• <math>C_c</math> = the weighted average cost of crime (estimated across all schemes)</li> </ul>
---

This break-even reduction in arrests per person was calculated using both upper and lower estimates for  $C_c$  and presented as the reduction in arrests per 100 people. For example, for scheme D, the average cost of an intervention over the six-month period we addressed was £570. To break even using the lower estimate of the cost of crime means:

$$\begin{aligned}
 R &= £570 / £9,560 \text{ per arrest} \\
 &= 0.06 \text{ fewer arrests per person} \\
 &= 6.0 \text{ fewer arrests per 100 people}
 \end{aligned}$$

Using the upper estimate gives  $R = 3.0$  fewer arrests per 100 people for break even. In reality, the average reduction in arrests observed for scheme D was 0.6 per 100 people, a factor of between five and ten lower than the reduction required for break even. This means that for scheme D to have achieved break even over the six-month period we addressed, it would either need to have:

- delivered between five and ten times the number of interventions that were delivered, with the same efficacy; or
- the interventions that were delivered would need to have achieved a greater reduction in arrests over the next six months.

For the latter case, the observed reduction in arrests, of 0.6 per 100 people, is equivalent to one less arrest for every 167 interventions. To achieve break even, given the number of interventions delivered, there would need to be one less arrest for every 17 to 33 interventions.

## Appendix 2: Analysis of AIR Forms

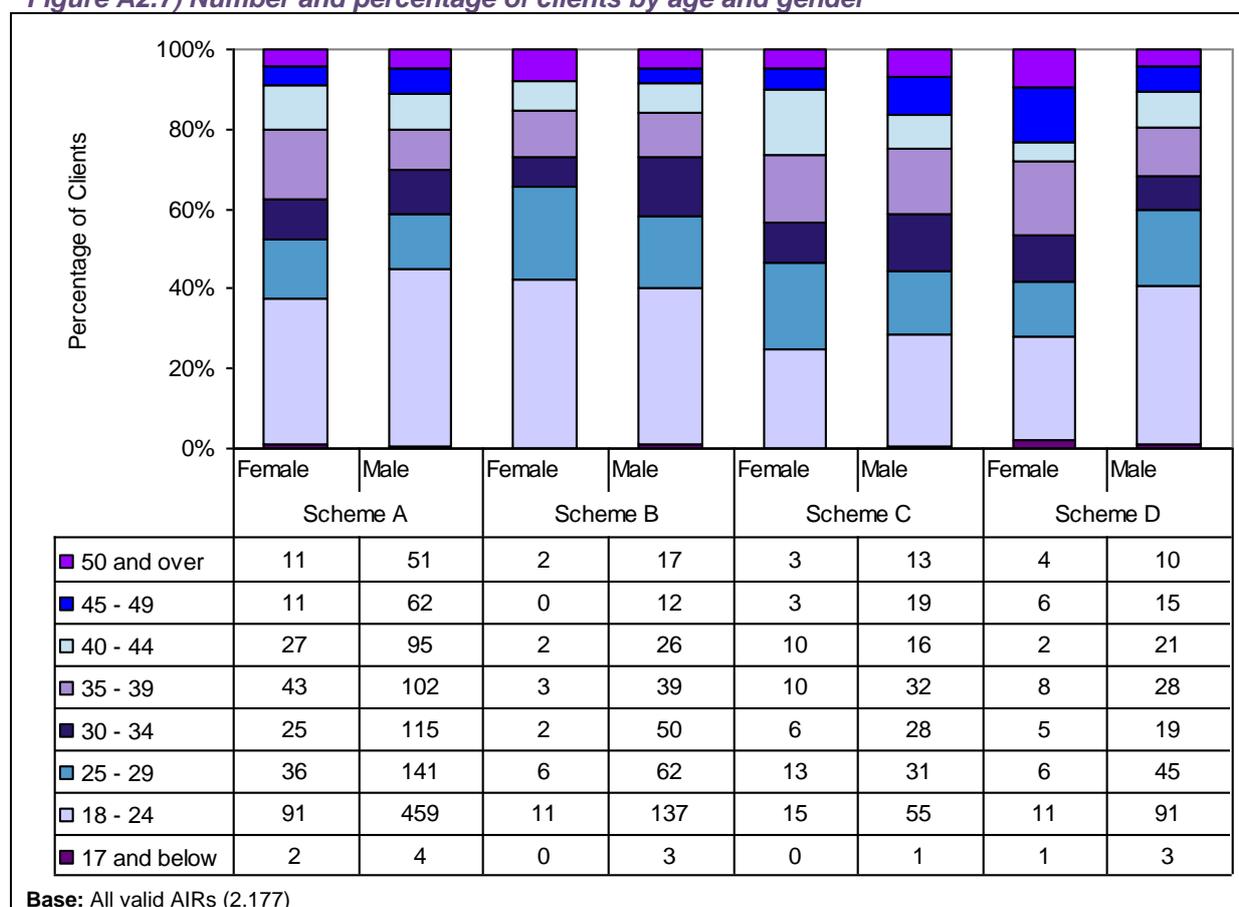
### Client demographics

The following analysis includes all AIRs received and completed to a suitable level.

#### Age and gender

Figure A2.7 gives details of age by gender for each scheme. Comparison with the gender profile of all arrestees in the pilot sites' police force areas (figures from Povey et al., 2009) revealed that scheme C saw a disproportionately high number of female clients and scheme B saw a higher proportion of males. Scheme A and D clients were similar in their gender breakdown to the overall group of arrestees for their force areas in 2007/08.

**Figure A2.7) Number and percentage of clients by age and gender**

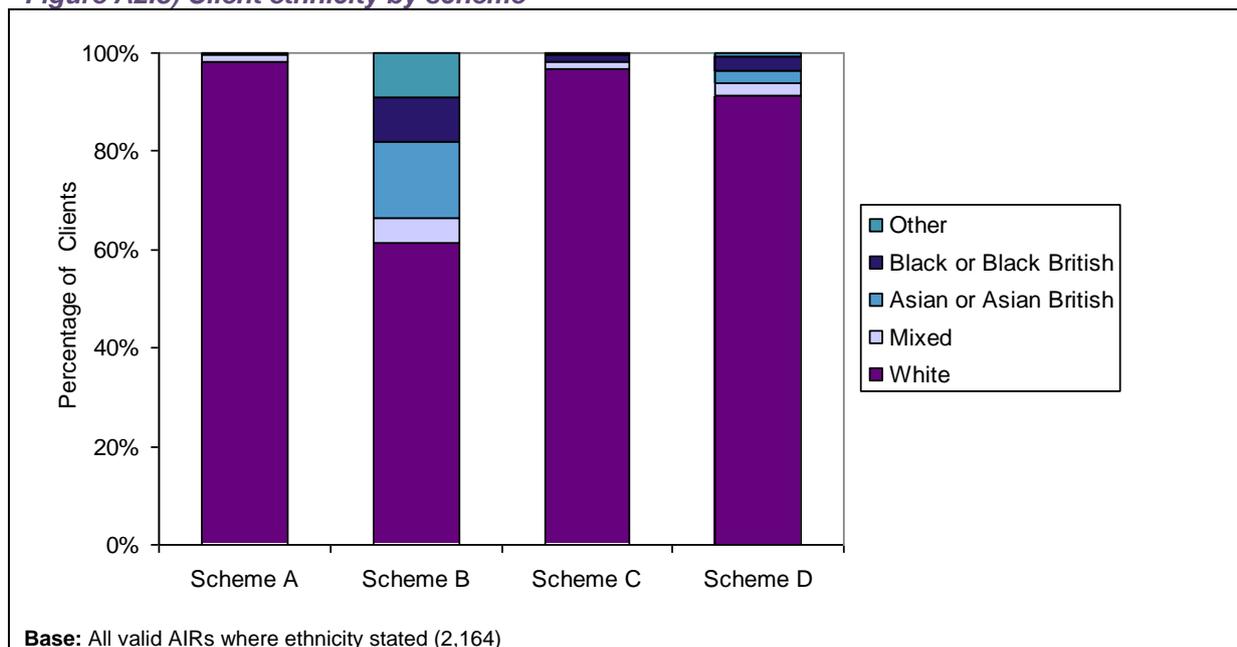


#### Ethnicity

Figure A2.8 shows the ethnic breakdown of clients seen by the four schemes. The ethnic breakdown of clients in each area is generally similar to that for all arrestees for the corresponding force area. The exceptions to this were schemes B and D where a greater proportion of scheme clients were from a White ethnic background than among the general arrestee population<sup>43</sup>. These variations may be due to the mix of people being arrested for alcohol-related offences being different from the profile of all arrestees, rather than any bias in who the interventions were given to. For periods during the pilot, scheme B employed an intervention worker who was a fluent Polish speaker (in addition to a Punjabi speaker).

<sup>43</sup> Ethnicity comparisons drawn from Ministry of Justice, 2009.

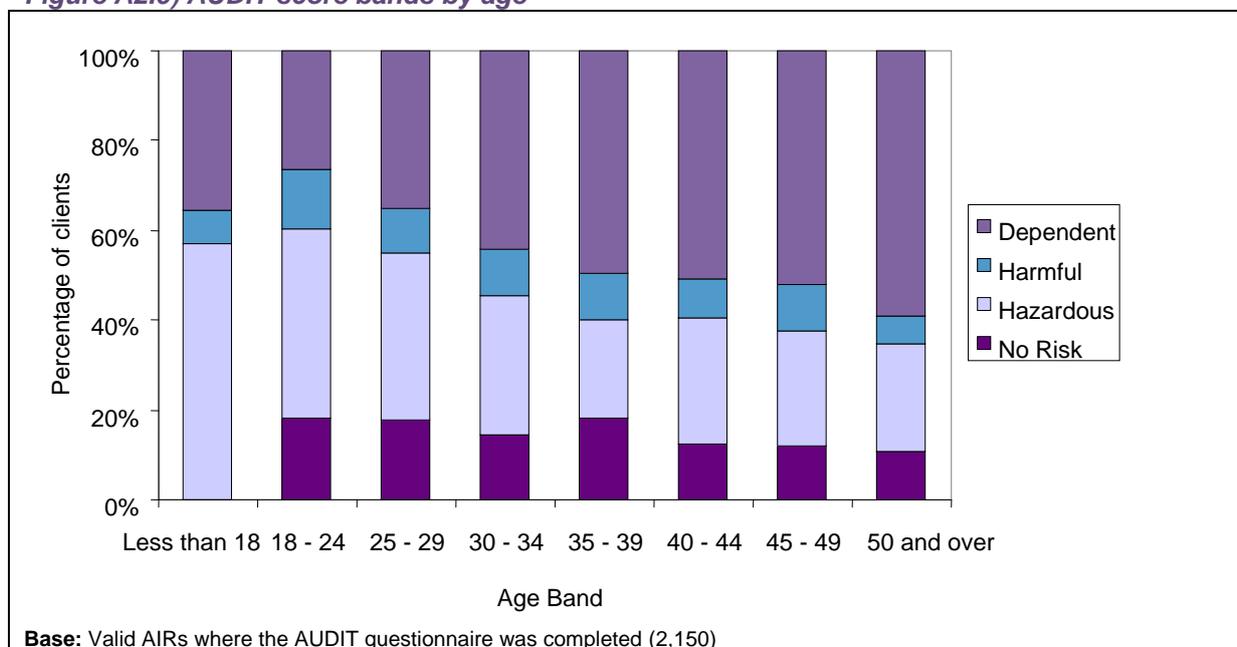
**Figure A2.8) Client ethnicity by scheme**



### AUDIT Score

Figure 3 in the main body of the report presented the AUDIT band proportions by scheme and showed that a high proportion of clients were dependent drinkers, especially on scheme C. There was a significant positive correlation between AUDIT scores and age (see Figure A2.9). Younger clients (under 30) were more likely to be hazardous drinkers whilst those over 30 were more likely to be dependent.

**Figure A2.9) AUDIT score bands by age**



### Change in AUDIT score

One of the aims of the evaluation was to assess whether there was a reduction in alcohol consumption following the alcohol interventions. This was assessed by asking clients to

complete a follow-up AIR six months after the intervention and comparing the responses to the AUDIT questions at each stage.

Table A2.12 shows that, for the 162 clients completing both an initial and follow-up AIR, there was an overall significant reduction in the median AUDIT score from 19 to 15 (out of a maximum score of 40). The table also shows the median scores for the AUDIT C measure which is based on the first three consumption-related questions of the AUDIT tool. For the clients who provided complete AUDIT C scores at intervention and at follow-up there was a significant reduction in scores (from nine to six out of a maximum score of 12) indicating a reduction in alcohol consumption.

**Table A2.12) Median AUDIT scores pre and post intervention**

Group	AUDIT			AUDIT C	
	n	Pre	Post	Pre	Post
<b>Overall</b>	162	<b>19</b>	<b>15</b>	<b>9</b>	<b>6</b>
No Risk	29	6	8	5	4
Hazardous	42	11	8.5	<b>8</b>	<b>6</b>
Harmful	15	18	15	<b>9</b>	<b>7</b>
Dependent	76	<b>27.5</b>	<b>26</b>	<b>11</b>	<b>8</b>
Male	140	<b>18</b>	<b>14.5</b>	<b>9</b>	<b>6</b>
Female	22	21	16.5	<b>9.5</b>	<b>5.5</b>
Scheme A	84	<b>18.5</b>	<b>14</b>	<b>10</b>	<b>6</b>
Scheme B	22	<b>19</b>	<b>10</b>	<b>7</b>	<b>5.5</b>
Scheme C	25	28	27	11	8
Scheme D	31	12	15	7	7
18-24	38	14	13.5	<b>8</b>	<b>7</b>
25-29	25	17	10	<b>9</b>	<b>5</b>
30-34	20	13.5	10	<b>8</b>	<b>5</b>
35-39	21	22	12	<b>10</b>	<b>5</b>
40-44	23	21	18	<b>9</b>	<b>7</b>
45-49	16	19.5	13	<b>9</b>	<b>7</b>
50 +	19	26	22	<b>10</b>	<b>6</b>

**Base:** Clients completing the AUDIT tool on both the initial and follow-up AIRs (162).

AUDIT scored on a scale of 0 to 40 and AUDIT C 0 to 12.

Pairs of scores marked in bold indicate statistically significant differences (P<5%).

Table A2.12 also shows a significant reduction in the AUDIT score for dependent drinkers, males and clients seen by schemes A and B, but not for the other groups. By contrast, there were significant reductions in the AUDIT C score for every group apart from no risk drinkers (which might be expected) and clients on schemes C and D.

The results show a significant reduction in alcohol consumption. While this is encouraging, it is important to note that only a small proportion of clients completed the follow-up AIRs and this could have introduced a bias to the results. Also, in the absence of a control group, we cannot determine how much of the reduction is attributable to the alcohol intervention rather than the experience of being arrested or other factors in clients' lives.

## Health

Figure 2.10 shows how clients rated their own general health by scheme. Although the highest proportion of clients in all areas rated their health as good, clients in scheme C rated their health less positively (36% rated their health as only fair or poor) and clients in scheme D perceived their health to be better than in other sites (32% rating it as very good or excellent).

**Figure A2.10) Self-reported general health by scheme**

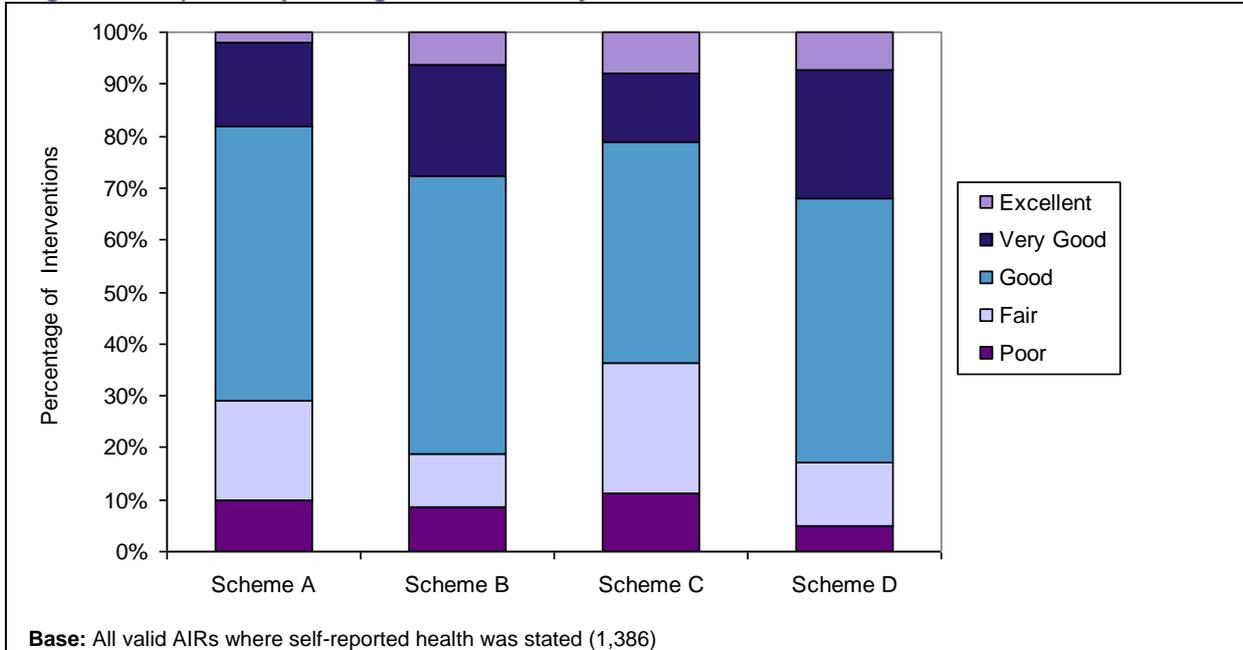
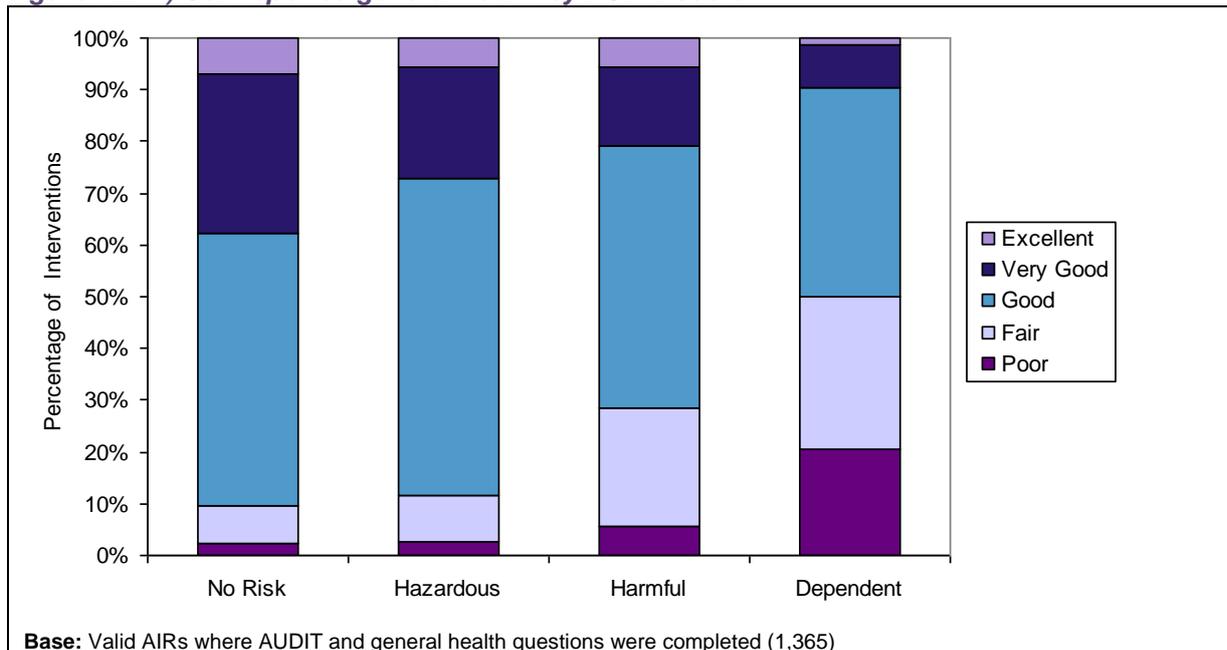


Figure A2.11 shows that health ratings were worse among clients who were dependent drinkers, with 20 per cent of clients who fell into this AUDIT band reporting that their health was poor compared with six per cent of harmful drinkers, three per cent of hazardous drinkers and two per cent of clients classified as having no risk.

**Figure A2.11) Self-reported general health by AUDIT score**



## Readiness to change

The readiness to change scale was completed on over 94 per cent of the AIRs and for 98 per cent of these the score was expressed as a multiple of ten (i.e. 30, 40, 50 and so on). This suggests that that staff saw little value in scoring readiness to change on a scale of 0 to 100 and, if this level of resolution is not necessary, a scale of 0 to 10 may be more appropriate.

**Table A2.13) Readiness to change descriptive statistics by pilot site**

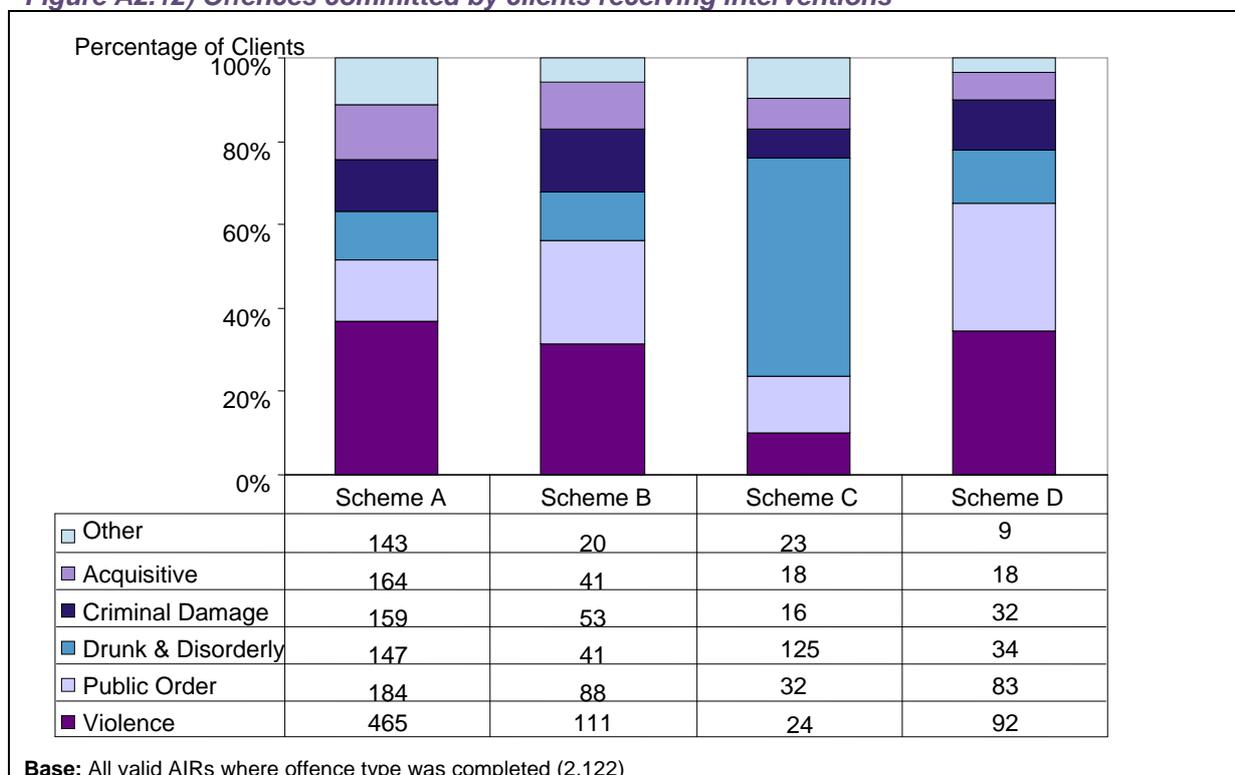
	Scheme A	Scheme B	Scheme C	Scheme D
RTC scale not completed	81	37	39	3
RTC scale completed	1,194	335	216	272
Median RTC score <sup>44</sup>	60	50	70	50
Interquartile range	50	70	47.5	90

A Spearman correlation on clients' reported readiness to change and their AUDIT score found a significant association which suggests that clients with higher AUDIT scores were more likely to be ready to change.

## Offending

Alcohol workers recorded the offence type when completing the AIRs and this was later classified, for the evaluation, into a number of categories. The breakdown of offences committed by clients receiving alcohol interventions is shown in Figure A2.12.

**Figure A2.12) Offences committed by clients receiving interventions**



<sup>44</sup> Median has been used as the samples' readiness to change scores are not normally distributed.

Direct comparisons with arrests in each site's police force area are difficult due to the different breakdown of offences provided in publications from the Home Office (Povey et al., 2009). As such, comparison is only available for violence, criminal damage, drugs offences and acquisitive offences. In all sites, as might be expected, levels of acquisitive offences among clients receiving alcohol interventions were much lower than the general arrest population in 2007/08. Drug-related offences were also less common – particularly in schemes C and D. Proportions of criminal damage offenders were similar except for scheme D where criminal damage was a much more common offence among pilot scheme clients. Levels of violence-related offences were similar in all sites apart from scheme C where rates were much lower.

The patterns of offences for those receiving alcohol interventions did not vary substantially across age groups and generally reflected overall patterns outlined in Figure 2.12, with violence offences being the most common group of offences in all age bands. Older clients receiving interventions were slightly more likely than their younger counterparts to have been arrested for being drunk and disorderly, while younger clients were more likely to have been arrested for public order offences.

## Appendix 3: Analysis of Arrest Data

To test the effect of alcohol interventions on arrest rates, data were requested from the police forces associated with the four pilots. The outcomes of these approaches were as follows.

- The police force for scheme A declined to provide raw arrest data, but produced anonymised datasets for the Intervention and Control Groups themselves.
- The arrest data for scheme B were not in a usable form. Early data existed only in the form of paper records and the later data were in an electronic database, but it was not possible to retrieve them. It was concluded that analysis of arrest data was not possible for scheme B.
- The police forces for schemes C and D provided raw arrest data for the time periods of interest, with data fields limited to those needed for the evaluation. The data were then analysed by the evaluation team to create the Intervention and Control Group datasets, as described in Appendix 1.

The results of the arrest data analysis are summarised in Chapter 0 of the main report. This appendix describes how the data were converted into a form suitable for analysis, the underlying results for the differences between arrests before and after the intervention, and the hypothesis tests that were carried out.

### Statistical analysis of arrest data

#### Arrest rates

Before analysing the differences between pre-arrest and post-arrest rates, it is useful to look at the arrest rates themselves. Table A3.14 shows that between 49 per cent and 70 per cent of offenders in the three Intervention and Control Groups (61% overall) had no other arrests in the six months before and six months after the index arrest. This is consistent with a recent study by the Jill Dando Institute which found that around 40 per cent of people arrested for one or two violent offences at licensed premises had no other recorded criminal involvement since 1996 (Donkin and Birks, 2007).

**Table A3.14** Arrestees with no other arrests within six months either side of index arrest

	Intervention Group	Control Group
<b>Scheme A</b>	67%	62%
<b>Scheme C</b>	54%	70%
<b>Scheme D</b>	49%	54%

**Note:** Overall the figure was 61 per cent

#### Differences between pre-arrest and post-arrest rates

For each individual the number of pre-arrests<sup>45</sup> and post-arrests was summed and the difference (pre-arrests minus post-arrests) is a measure of the trend in the arrests. If this difference is positive, there has been a reduction in arrests. If the interventions reduce re-offending, we would expect that this difference would be greater, per person, in the Intervention Group than in the Control Group (using the difference of differences comparison). This comparison can be made at any level of aggregation, although for the more disaggregated numbers the smaller sample size makes it less easy to detect a significant effect.

<sup>45</sup> As noted earlier, the index arrest was excluded from the pre-arrests and post-arrests. If the arrest was included it would be cancelled out when the difference of differences was calculated.

The average values of the difference in arrests per person are shown in the following tables. The tables show the difference in arrest rates for each Intervention and Control Group, broken down by gender, age band and offence type, and then the 'difference of differences'. The tables are colour coded to make it easier to see the patterns of positive numbers (green cells) and negative numbers (pink cells). After each Intervention and Control Group table, the difference of differences (intervention minus control) is shown. A positive number here is *prima facie* evidence that the interventions reduced re-offending.

Later in the appendix arrest rates for harmful and hazardous drinkers only are considered (evidence from health settings suggests brief interventions can work on these groups (Wilk *et al.*, 1997; Heather and Wallace, 2003; Wutzke *et al.*, 2002; Moyer and Finney, 2004; Kaner *et al.*, 2009) whilst evidence for their use in dependent clients' groups is less conclusive (Academic ED SBIRT Research Collaborative Group, 2007; Bazargan-Hejazi *et al.*, 2005; Moyer *et al.*, 2002; Mattick and Jarvis, 1994; McQueen *et al.*, 2009)).

**Table A3.15) Scheme A arrest rate analysis**

**Difference in arrests per person – Scheme A Intervention Group**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	-0.41	-0.17	-0.17	-0.29	-0.43	-0.28	0.00	0.00	2.50	0.00	-0.75	0.17	-0.24
Driving Offences	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drunk & Disorderly	0.43	-0.08	-0.33	0.13	-0.25	0.01	-0.25	0.00	0.00	0.00	-1.00	-0.26	-0.05
Public Order	-0.27	0.16	-0.24	0.27	-0.63	-0.06	-0.25	-0.38	-1.33	0.00	-0.67	-0.41	-0.13
Violence	0.13	-0.12	-0.13	-0.09	-0.18	-0.10	0.00	-0.33	0.00	0.08	0.24	0.00	-0.08
All Offences	-0.04	-0.06	-0.18	-0.01	-0.29	-0.11	-0.17	-0.27	0.07	0.05	-0.21	-0.11	-0.11

**Difference in arrests per person – Scheme A Control Group**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	-0.30	-0.11	-0.67	0.00	-0.43	-0.25	0.00	0.00	0.50	-0.67	0.00	-0.08	-0.23
Driving Offences	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drunk & Disorderly	0.21	-0.04	0.83	0.00	0.00	0.10	1.25	-0.20	0.00	-0.22	-0.60	-0.04	0.06
Public Order	-0.20	-0.05	-0.06	0.04	0.16	-0.02	0.42	-0.13	0.33	0.33	0.00	0.21	0.03
Violence	-0.29	-0.25	-0.15	0.04	0.08	-0.10	0.17	-0.11	-0.10	-0.35	0.06	-0.13	-0.10
All Offences	-0.20	-0.15	-0.14	0.03	0.03	-0.08	0.48	-0.12	0.07	-0.29	-0.07	-0.04	-0.08

**Difference of differences - Scheme A (arrests per person)**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	-0.11	-0.06	0.50	-0.29	0.00	-0.04	0.00	0.00	2.00	0.67	-0.75	0.25	-0.01
Driving Offences	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drunk & Disorderly	0.21	-0.04	-1.17	0.13	-0.25	-0.08	-1.50	0.20	0.00	0.22	-0.40	-0.22	-0.12
Public Order	-0.07	0.22	-0.18	0.23	-0.79	-0.04	-0.67	-0.25	-1.67	-0.33	-0.67	-0.62	-0.16
Violence	0.42	0.12	0.03	-0.12	-0.26	0.00	-0.17	-0.22	0.10	0.42	0.18	0.13	0.03
All Offences	0.16	0.08	-0.04	-0.03	-0.31	-0.03	-0.65	-0.15	0.00	0.34	-0.14	-0.07	-0.04

**Table A3.16) Scheme C arrest rate analysis**

**Difference in arrests per person – Scheme C Intervention Group**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	0.00	0.50	0.00	1.00	1.33	0.67	2.00	0.00	0.00	0.00	0.00	1.00	0.73
Driving Offences	0.00	0.00	0.50	-0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drunk & Disorderly	-0.38	0.00	0.00	0.78	-0.57	0.04	0.00	0.33	0.00	0.29	0.57	0.30	0.11
Public Order	-1.00	0.00	0.00	-2.00	0.00	-1.25	2.00	0.00	1.00	0.00	0.00	1.50	-0.33
Violence	0.00	0.00	-0.20	0.00	0.00	-0.06	0.00	0.00	0.00	-1.33	0.00	-0.67	-0.23
All Offences	-0.36	0.04	0.00	0.33	-0.19	0.03	0.80	0.25	0.14	-0.20	0.50	0.24	0.08

**Difference in arrests per person – Scheme C Control Group**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	0.50	-0.13	-0.63	0.75	0.08	0.00	-0.25	0.00	0.00	0.00	0.00	-0.13	-0.02
Driving Offences	0.00	0.00	-0.25	-0.42	0.00	-0.29	0.00	0.00	0.00	0.00	0.00	0.00	-0.25
Drunk & Disorderly	0.03	0.02	0.08	-0.03	-0.21	-0.03	0.25	0.00	-0.17	-0.11	-0.18	-0.08	-0.04
Public Order	0.00	0.00	0.00	-0.38	0.00	-0.19	0.00	0.00	-0.50	0.00	0.00	-0.25	-0.21
Violence	0.00	0.00	-0.25	0.08	-0.08	-0.06	0.00	0.00	0.00	0.08	0.00	0.04	-0.03
All Offences	0.07	0.01	-0.11	-0.04	-0.14	-0.05	0.10	0.00	-0.14	-0.05	-0.16	-0.07	-0.05

**Difference of differences - Scheme C (arrests per person)**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	-0.50	0.63	0.63	0.25	1.25	0.67	2.25	0.00	0.00	0.00	0.00	1.13	0.75
Driving Offences	0.00	0.00	0.75	0.08	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Drunk & Disorderly	-0.41	-0.02	-0.08	0.81	-0.36	0.07	-0.25	0.33	0.17	0.39	0.75	0.38	0.14
Public Order	-1.00	0.00	0.00	-1.63	0.00	-1.06	2.00	0.00	1.50	0.00	0.00	1.75	-0.13
Violence	0.00	0.00	0.05	-0.08	0.08	0.00	0.00	0.00	0.00	-1.42	0.00	-0.71	-0.19
All Offences	-0.43	0.03	0.11	0.38	-0.05	0.08	0.70	0.25	0.29	-0.15	0.66	0.30	0.13

**Note:** As described below, the Intervention Group for scheme C included an 'outlier' result which had a disproportionate effect on the results for groupings including the individual concerned.

**Table A3.17) Scheme D arrest rate analysis**

**Difference in arrests per person – Scheme D Intervention Group**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	-0.40	-1.00	0.50	0.17	0.00	-0.21	0.00	0.00	0.00	-1.00	0.00	-1.00	-0.24
Driving Offences	1.00	0.50	-1.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Drunk & Disorderly	-3.00	0.50	-0.33	-1.38	0.75	-0.50	1.00	0.00	0.00	0.00	0.33	0.50	-0.33
Public Order	0.14	0.00	-0.25	-0.22	-0.40	-0.15	0.00	0.00	0.00	0.25	0.50	0.29	-0.10
Violence	0.80	-0.17	-0.12	-0.08	0.30	0.02	-1.00	0.00	0.00	0.40	0.00	-0.07	0.00
All Offences	0.05	-0.17	-0.10	-0.36	0.07	-0.13	-0.50	0.00	0.00	0.20	0.22	0.07	-0.10

**Difference in arrests per person – Scheme D Control Group**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	-0.70	0.44	-0.54	-0.17	0.17	-0.13	0.00	0.00	0.00	-0.50	0.00	-0.75	-0.16
Driving Offences	-0.25	-0.63	0.00	0.00	0.00	-0.30	0.00	0.00	0.00	0.00	-1.00	-1.00	-0.42
Drunk & Disorderly	0.00	-0.50	-1.08	0.31	-1.19	-0.38	-1.25	0.00	0.00	0.00	0.17	-0.19	-0.34
Public Order	-0.39	-0.16	0.31	0.08	-0.18	-0.05	0.00	0.00	0.00	-1.19	-0.63	-0.86	-0.14
Violence	0.70	-0.17	0.01	-0.10	0.20	0.02	-0.17	0.33	0.25	-0.25	0.50	0.07	0.03
All Offences	-0.16	-0.11	-0.06	0.03	-0.14	-0.08	-0.44	0.33	0.13	-0.65	-0.06	-0.27	-0.11

**Difference of differences - Scheme D (arrests per person)**

Offence Type	Male (broken down by age band)						Female (broken down by age band)						All M & F
	<20	20-24	25-29	30-39	40+	Overall	<20	20-24	25-29	30-39	40+	Overall	
Criminal Damage	0.30	-1.44	1.04	0.33	-0.17	-0.08	0.00	0.00	0.00	-0.50	0.00	-0.25	-0.09
Driving Offences	1.25	1.13	-1.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1.00	1.00	0.58
Drunk & Disorderly	-3.00	1.00	0.75	-1.69	1.94	-0.13	2.25	0.00	0.00	0.00	0.17	0.69	0.01
Public Order	0.54	0.16	-0.56	-0.31	-0.23	-0.10	0.00	0.00	0.00	1.44	1.13	1.14	0.04
Violence	0.10	0.00	-0.13	0.02	0.10	-0.01	-0.83	-0.33	-0.25	0.65	-0.50	-0.13	-0.03
All Offences	0.21	-0.06	-0.04	-0.39	0.21	-0.05	-0.06	-0.33	-0.13	0.85	0.28	0.34	0.01

The overall difference of differences for schemes C and D are positive (+0.13 and +0.01 respectively). It is interesting to note how this varies by gender. In both cases the effect appears to be higher for females than for males. In scheme C the numbers are (M +0.08; F +0.30) while in scheme D they are (M -0.05; F +0.34). In both cases there appears to be an effect for females and not for males.

However, the overall difference of differences for scheme A is small and negative (-0.04). Splitting this by gender, the effects remain small and negative (M -0.03, F -0.07). There is no indication here that female clients responded as favourably as they appeared to do on the other two schemes.

It is possible to look at these numbers at lower levels of aggregation, but no immediate pattern is apparent. It is more important to see whether the differences observed here are statistically significant, even at the highest levels of aggregation.

**Hypothesis testing**

Examination of the difference in difference results suggested a number of hypotheses about possible effects, and these were tested for statistical significance using a permutation test in Stata. In each case a ‘treatment group’ was created of individuals with some property, and a ‘control group’ of those without it, and the two were compared. To avoid confusion between

the specific use of 'Control Group', as used hitherto to mean 'not the Intervention Group', and the generic use here of 'control group', we use capital letters for the former but not the latter. In the simplest tests the treatment group is the Intervention Group and the control group is the Control Group.

Table A3.18 summarises the tests that were carried out, and the resulting P value as the measure of significance. If P is less than five per cent it can be said that the treatment group difference was significantly greater than the control group difference, and therefore the treatment appears to have some effect in reducing offending rates. Conversely, if P is greater than 95 per cent means that the treatment group difference is significantly lower than the control group difference.

### **The schemes overall and individually**

The table begins by showing the difference of difference if the results from the three AAR schemes are combined. This shows a small reduction in arrest rates (an average of 0.005 arrests per person for the six-month period after the intervention) but it is not statistically significant. The reduction in arrest rates is higher for females but is also not statistically significant.

The Intervention and Control Groups are then compared for each scheme individually; again none of the differences of differences was significant but scheme C showed a more marked reduction in arrests and this was closer to being significant than the results for the other two schemes. Based on the evidence from scheme C (see Table A3.16), the tests were repeated with females only and this showed that there was a similar reduction in arrests for females on schemes C and D. However, the result for scheme D was not significant and scheme C's result was only significant at the  $p < 10\%$  level (rather than the usually accepted  $p < 5\%$  level).

### **Voluntary and compulsory referrals**

Many of the alcohol interventions in schemes A and C were voluntary, while most of them in scheme D were compulsory (mainly conditional bail but some conditional caution). To test whether the type of referral had an effect on the results, the 'voluntary' clients from all three schemes were merged to form a treatment group; the Control Groups for all three schemes provided the control group. The test was then repeated with clients receiving a compulsory intervention on any of the three schemes forming the treatment group.

The results are presented in Table A3.18 which shows that the difference of differences was very small and that, in each case, the result was not statistically significant.

### **AUDIT score**

Because the alcohol interventions are thought to be most effective for those classed as hazardous or harmful drinkers, it might be expected that a stronger effect would be seen if the Intervention Group was restricted to individuals with AUDIT scores in this range. This was explored using two tests. The first combined the hazardous and harmful members of the Intervention Groups from all three schemes and compared that treatment group with the combined Control Groups of the schemes. The second compared the dependent drinkers from the three Intervention Groups to the combined Control Groups. Table A3.18 shows that, unlike dependent drinkers, the harmful and hazardous drinkers showed a favourable reduction in the arrest rate but that this was not significant.

**Table A3.18) Results of hypothesis testing**

Treatment group	Control group	Diff. for treatment group	Diff. for control group	Difference of differences	P
<b>Overall results</b>					
All schemes IG	All schemes CG	-0.084	-0.089	0.005	46%
All schemes IG, female	All schemes CG, female	-0.030	-0.113	0.083	33%
<b>Scheme by scheme results</b>					
Scheme A IG	Scheme A CG	-0.111	-0.076	-0.035	74%
Scheme C IG	Scheme C CG	0.078	-0.550	0.628	13%
Scheme D IG	Scheme D CG	-0.101	-0.126	0.025	46%
Scheme A IG, female	Scheme A CG, female	-0.114	-0.043	-0.071	71%
Scheme C IG, female	Scheme C CG, female	0.235	-0.066	0.301	7.8%*
Scheme D IG, female	Scheme D CG, female	0.071	-0.259	0.330	35%
<b>Results by type of referral</b>					
All schemes IG with voluntary intervention	All schemes CG	-0.073	-0.089	0.016	39%
All schemes IG with compulsory intervention	All schemes CG	-0.167	-0.089	-0.078	79%
<b>Results by type of drinker</b>					
All schemes IG with harmful or hazardous AUDIT scores	All schemes CG	-0.049	-0.089	0.040	27%
All schemes IG with dependent AUDIT scores	All schemes CG	-0.160	-0.089	-0.071	80%

\* Significant at p<10% level

**Note:** the analysis includes 'outlier' offenders including, most notably, a male offender in the Intervention Group of scheme C who had 18 pre-arrests and three post-arrests. Removing this individual meant that none of the changes in arrest rate was significant.

### Arrest type

As noted earlier, the pre-arrests and post-arrests used to calculate the difference in arrests included arrests for offences that were thought less likely to be alcohol related. To test whether this affected the results, the tests were repeated with only arrests for the five 'alcohol-related' offence types included. This also found no significant difference of differences.

### Outliers

The data were also examined to see if the results of the tests were affected by the presence of 'outlier' cases. The most obvious example of such an outlier was a single (male) individual in the scheme C Intervention Group who had 18 pre-arrests and three post-arrests. When he was excluded from the Intervention Group the change in arrest rate (fourth row of table

A3.18) dropped from +0.078 to -0.029, resulting in the difference of differences changing from +0.628 to +0.521 and the corresponding P value increased from 13 per cent to 42 per cent. This demonstrates how sensitive the scheme C results were to the presence of this outlier (although the female-only results were unaffected).

### **Summary**

The results did not identify a statistically significant reduction in arrest rates from the alcohol interventions, regardless of scheme, referral type or treatment group. That does not, of course, mean that it has been proved that alcohol interventions do not reduce arrest rates. Rather, it shows that larger sample sizes will be needed to calculate the change in arrest rate with any statistical significance – especially if the effect needs to be assessed for subgroups such as female clients, people receiving compulsory referrals or hazardous and harmful drinkers.